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Transportation of Dangerous Goods (TDG) Act and Regulations

Replacement Instructions, Summary of Changes and New Pages

Amendment SOR/2019-75
(Containers for Transport of Dangerous Goods by Rail), published April 3, 2019

Amendment SOR/2019-101
(Emergency Response Assistance Plan), published May 1, 2019

New regulations SOR/2019-113
(Transportation of Dangerous Goods by Rail – Security Regulations), published May 6, 2019

Before you start: Make sure your current version of the TDG Act and Regulations binder is the most recent one. Check the top of the copyright page under the Danatec logo. It should say © 2015, 2016, 2017, 2018.

To update your binder: Print the TDG Update Package double-sided, on paper that matches the weight of the sheets in the binder. Hole-punch the printed sheets and follow the instructions below.

To track completion: Initial the last column as you complete the updates, and keep this page in your binder.

To review specific changes or additions: Refer to the applicable legislation (SOR/2019-75 for rail amendments, SOR/2019-101 for ERAP amendments and SOR/2019-113 for rail security regulations). These are available on the Canada Gazette website: http://www.gazette.gc.ca.

Section of binder	Double-sided sheets (e.g. 3/4 = pages 3 and 4 = 1 sheet)	No. of sheets	Changes related to rail (SOR/2019-75)	Changes related to ERAP (SOR/2019-101)	Initial
Front	Replace all pages (cover to page 16)	9	Copyright page Table of Contents (Parts 1, 5, 10 and Resources)	Copyright page Table of Contents (Part 7, 8 and Resources)	
Part 1	Replace all pages (1 to 48)	24	Table of Contents 1.3.1 1.3.3 1.34	1.4 1.15(2)(a) 1.16(2)(a) 1.21(2) 1.22(2) 1.23(2) 1.44(a)	
Part 2	Replace 1 sheet: pages 35/36	1		Appendix 3, Guide	
Part 3	Replace all pages (1 to 12)	6		Definitions 3.5(4) 3.6(1) and (2) 3.6.1(3)	
Part 4	Replace 4 sheets: pages 3/4 and pages 11/12, 13/14, 15/16	4		Definitions 4.15.1 4.15.2(a) 4.16(2)(b) 4.16.1(2)(a) 4.17(1) 4.18.1	
Part 5	Replace all pages (1 to 12)	6	Table of Contents 5.1 5.14(1.1) 5.14.1 to 5.15.11		
Part 6	Replace 1 sheet: pages 3/4	1		Definitions 6.2(g)	

(continued on next page)

Section of binder	Double-sided sheets (e.g. 3/4 = pages 3 and 4 = 1 sheet)	No. of sheets	Changes related to rail (SOR/2019-75)	Changes related to ERAP (SOR/2019-101)	Initial
Part 7	Replace all pages (1 to 10)	5		Table of Contents Definitions 7.1 to 7.11 New (replace all)	
Part 8	Replace all pages (1 to 14)	7		Table of Contents Definitions 8.2 Table 8.6 8.7(q) 8.8 (1) 8.11 8.13(1) 8.15.1 8.20 to 8.23 (New)	
Part 9	Replace all pages (1 to 6)	3		Definitions 9.1(1)(a)(iv) 9.2(1)(a) 9.3(1)(a)	
Part 10	Replace all pages (1 to 10)	5	Table of Contents 10.1.1 10.7(5) 10.8	Definitions 10.1(1)(a)(iv) 10.2(1)(a) 10.3(1)(a)	
Part 11	*no replacements*				
Part 12	Replace 1 sheet: pages 3/4	1		Definitions 12.1(1)(c)(v)	
Parts 13-16	*no replacements*				
Schedule 1	Replace 2 sheets: pages 1/2 and 59/60	2		Legend, Column 7 UN 2900	
Schedule 2	Replace 2 sheets: pages 15/16 and 33/34	2		Special Provision 84 Special Provision 150	
Schedule 3	*no replacements*				
TDG Act	*no replacements*				
Resources	Replace pages 1/2 Add pages 87 to 116	16	First page New RIAS: pages 87 to 104	First page New RIAS: pages 105 to 116	
NEW Rail Security Regulations	Add cover/copyright sheet, table of contents sheet, and pages 1 to 22	13			
NEW Rail Security Resources	Add pages 1 to 20	10			
	TOTAL	115 sheets			

Effective date: The ERAP amendments came into effect June 1, 2019, with a 9-month transition period. The rail amendments come into effect on July 2, 2019, and the new rail security regulations have various implementation dates. However, you may go ahead and update the contents of your binder right away.

New tabs: You'll need to create two new tabs to add at the back of your binder:
Rail Security Regulations
Rail Security Resources

Questions? Contact:
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Transportation of Dangerous Goods

Regulations

TDG Regulations
TDG Act
TDG by Rail – Security Regulations

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Includes amendments:
SOR/2014-152 (Update of Standards), published July 2, 2014
SOR/2014-159 (Part 4, Dangerous Goods Safety Marks), published July 2, 2014
SOR/2014-306 (Lithium Metal Batteries, ERAPs and Updates to Schedules), published December 12, 2014
SOR/2015-100 (TC 117 Tank Cars), published May 20, 2015
SOR/2016-95 (Reporting Requirements and International Restrictions on Lithium Batteries), published June 1, 2016
SOR/2017-137 (International Harmonization Update, 2016), published July 12, 2017
SOR/2017-253 (Marine Provisions), published December 13, 2017
SOR/2019-75 (Containers for Transport of Dangerous Goods by Rail), published April 3, 2019
SOR/2019-101 (Emergency Response Assistance Plan), published May 1, 2019

Includes rail security regulations and applicable amendments:
SOR/2019-113 (Transportation of Dangerous Goods by Rail Security Regulations), published May 6, 2019

Disclaimer

This book is an unofficial consolidation of the text of the "Transportation of Dangerous Goods Regulations," the "Transportation of Dangerous Goods Act" and the "Transportation of Dangerous Goods by Rail Security Regulations." While every attempt has been made to ensure the accuracy and reliability of the contents of this publication, Danatec Educational Services Ltd. disclaims any liability/responsibility for its accuracy; loss or damage howsoever occasioned resulting from the use of any of the information in this manual or for the violation of any regulation with which the information may conflict.

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Transportation of Dangerous Goods by Rail – Security Regulations

PART 1

Coming into Force, Repeal, Interpretation, General Provisions and Special Cases

Table of Contents

PART 1
Coming into Force, Repeal, Interpretation, General Provisions and Special Cases

1.1 Coming into Force

Effective date

These Regulations come into force 12 months after the day on which they are published in Part II of the Canada Gazette.

1.2 Repeal

Repeal of 1985 Regulations

On the day these Regulations come into force, the "Transportation of Dangerous Goods Regulations", as made by Order in Council P.C. 1985-147 dated January 17, 1985 and registered as SOR/85-77, are repealed.

1.3 Interpretation

Use of italics

(1) Anything written in italics in these Regulations is not part of the Regulations.

(2) In these Regulations,

"Must" and "may"

(a) "must" is imperative and "may" is permissive;

"On", "in" and "by"

(b) the words "on", "in" or "by" are synonymous when they are associated with the defined term "road vehicle", "railway vehicle", "vessel" or "aircraft";

Pressure

(c) pressure expressed in kPa is gauge pressure unless designated as absolute pressure, except for vapour pressure, which is always absolute pressure;

Shipping names

(d) shipping names listed in Schedule 1 may be

- singular or plural

(i) written in the singular or plural,

- upper or lower case

(ii) written in upper or lower case letters, except that when the shipping name is followed by the descriptive text associated with the shipping name the descriptive text must be in lower case letters and the shipping name must be in upper case letters (capitals),

- word order

(iii) in English only, put in a different word order as long as the full shipping name is used and the word order is a commonly used one; and

For example, "AMMONIA, ANHYDROUS" may be written "ANHYDROUS AMMONIA" and "SULPHUR, MOLTEN" may be written "MOLTEN SULPHUR".

- solutions and mixtures

(iv) for solutions and mixtures, followed by the word "SOLUTION" or "MIXTURE", as appropriate, and may include the concentration of the solution or mixture; and

- waste

(v) for waste, preceded or followed by the word "WASTE" or "DÉCHET";

1.3 Interpretation *continued*

(e) a symbol set out in column 1 of the following table represents the corresponding unit of measure set out in column 2:

Symbols

TABLE

Column 1 Symbol	*Column 2* Unit of Measure
Bq	becquerel
°C	degree Celsius
ft^3	cubic feet
g	gram
h	hour
Hz	hertz
J	joule
J/g	joules per gram
kg	kilogram
kBq/kg	kilobecquerels per kilogram
km	kilometre
km/h	kilometres per hour
kPa	kilopascal
L	litre
L/kg	litres per kilogram
LC	lethal concentration
LD	lethal dose
m	metre
m^3	cubic metre
mg	milligram
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
mL	millilitre
mL/m^3	millilitres per cubic metre
mm	millimetre
mph	miles per hour
MPa	megapascal
mSv/h	millisieverts per hour
psig	pounds per square inch, gauge
µSv/h	microsieverts per hour
µm	micrometre

(f) when the word "placard" is used, it refers to a specific placard illustrated in the Appendix to Part 4, Dangerous Goods Safety Marks, but when a placard is required or permitted to be displayed, the singular includes the plural and it means the appropriate number of that placard required by Part 4;

Reference to placards

(g) the word "or" is used in the inclusive sense unless the associated text clearly indicates otherwise; *Use of "or"*

For example, condition "A or B" is satisfied if A is satisfied, if B is satisfied or if both A and B are satisfied. Similarly, condition "A, B, C or D" is satisfied if one or more of the four conditions is satisfied.

(h) when a shipping document or a document is required, the requirement refers to *Reference to shipping document*

- **(i)** the original shipping document or original document, or
- **(ii)** a copy of the shipping document or document;

(i) when it is necessary to convert between number of articles and net explosives quantity, one kilogram net explosives quantity must be counted as 100 articles and each 100 articles must be counted as one kilogram net explosives quantity; *Conversion to net explosives quantity*

(j) when dangerous goods are in a means of containment, it is the minimum required means of containment if *Minimum required means of containment*

- **(i)** all other means of containment containing it are removed, the means of containment and the dangerous goods it contains would be in compliance with the Act and these Regulations for the purposes of handling, offering for transport or transporting, and
- **(ii)** all other means of containment containing it and the means of containment itself are removed, some of the dangerous goods it contains would no longer be in a means of containment that is in compliance with the Act and these Regulations for the purposes of handling, offering for transport or transporting;

A railway boxcar containing propane in one or more cylinders would not be the minimum required means of containment for that propane because, if the railway boxcar (plus any means of containment containing the boxcar) were removed, the propane would still be in means of containment in compliance with the Act and the Regulations.

In most cases, the identification of the minimum required means of containment is obvious. The only situations in which it is not immediately obvious are situations involving "nested" means of containment, that is, where a first means of containment is contained in a second means of containment which may be contained in a third means of containment, and so on.

The identification of the minimum required means of containment is essential in determining gross mass. It is also useful in some situations to clarify when dangerous goods safety marks do not need to be displayed on means of containment inside the minimum required means of containment. See the definition of "gross mass", which is relevant in sections 1.6, 1.15, 1.16, 1.17, 1.19.1, 1.19.2, 1.29 and 7.1.

1.3 Interpretation *continued*

(k) when the words "means of containment" are used, they refer to the minimum required means of containment unless the associated text clearly indicates otherwise; and

Reference to minimum required means of containment

For example, the means of containment referred to in section 4.15 may contain dangerous goods that are included in different classes so that the means of containment may or may not be the minimum means of containment. Consequently, section 4.15 is not restricted to minimum means of containment.

(l) the words "gross mass of all dangerous goods" in sections 1.15, 1.16, 1.21 and 1.22 refer to dangerous goods that require shipping documents or that are intended to be transported in accordance with those sections.

Reference to gross mass

1.3.1 Table of Safety Standards and Safety Requirement Documents

A document set out in column 2 of the table to this section is a safety standard or a safety requirement. If the document is referred to in these Regulations, it is referred to by the short form set out in column 1.

Reference to documents

Because the short forms are set out alphabetically in each language, the corresponding item number in the French-language table is shown in parentheses under the English-language item number.

Some documents set out in the table are not mentioned in these Regulations; they are, however, referred to in documents that are mentioned in these Regulations.

TABLE

Item *(French)*	*Column 1* Short Form	*Column 2* Safety Standard or Safety Requirement
1 *(1)*	ASTM D 4359	ASTM D 4359-90, "Standard Test Method for Determining Whether a Material Is a Liquid or a Solid", July 1990, published by the American Society for Testing and Materials (ASTM)
2 *(2)*	ASTM F 852	ASTM F 852-86, "Standard Specification for Portable Gasoline Containers for Consumer Use", June 1986, published by the American Society for Testing and Materials (ASTM)
3 *(3)*	CGA P-20	"Standard for Classification of Toxic Gas Mixtures", Fourth Edition, 2009, published by the Compressed Gas Association, Inc. (CGA)
4 *(4)*	CGSB-32.301	National Standard of Canada CAN/CGSB-32.301-M87, "Canola Meal", April 1987, published by the Canadian General Standards Board (CGSB)
5 *(5)*	CGSB-43.123	National Standard of Canada CAN/CGSB-43.123, "Aerosol containers and gas cartridges for transport of dangerous goods", published by the Canadian General Standards Board (CGSB), as amended from time to time
6 *(6)*	CGSB-43.125	National Standard of Canada CAN/CGSB-43.125, "Packaging of Category A and Category B infectious substances (Class 6.2) and clinical (bio) medical or regulated medical waste", published by the Canadian General Standards Board (CGSB), as amended from time to time
7 *(7)*	CGSB-43.126	Canadian General Standards Board, CGSB-43.126, "Reconditioning, Remanufacturing and Repair of Drums for the Transportation of Dangerous Goods", published by the Canadian General Standards Board (CGSB), as amended from time to time
8 *(8)*	CGSB-43.146	National Standard of Canada CAN/CGSB-43.146, "Design, manufacture and use of intermediate bulk containers for the transportation of dangerous goods, classes 3, 4, 5, 6.1, 8 and 9", published by the Canadian General Standards Board (CGSB), as amended from time to time
9 *(9)*	CGSB-43.151	Canadian General Standards Board CGSB-43.151, "Packaging, handling, offering for transport and transport of Explosives (Class 1)", published by the Canadian General Standards Board (CGSB), as amended from time to time

Item *(French)*	*Column 1* Short Form	*Column 2* Safety Standard or Safety Requirement
10 *(11)*	CSA B339	CSA Standard B339, "Cylinders, spheres, and tubes for the transportation of dangerous goods", published by the Canadian Standards Association (CSA), as amended from time to time
11 *(12)*	CSA B340	CSA Standard B340, "Selection and use of cylinders, spheres, tubes, and other containers for the transportation of dangerous goods, Class 2", published by the Canadian Standards Association (CSA), as amended from time to time
12 *(13)*	CSA B341	CSA Standard B341, "UN pressure receptacles and multiple-element gas containers for the transport of dangerous goods", published by the Canadian Standards Association (CSA), as amended from time to time
13 *(14)*	CSA B342	CSA Standard B342, "Selection and use of UN pressure receptacles, multiple-element gas containers, and other pressure receptacles for the transport of dangerous goods, Class 2", published by the Canadian Standards Association (CSA), as amended from time to time
14 *(15)*	CSA B620	CSA Standard B620, "Highway tanks and TC portable tanks for the transportation of dangerous goods", published by the Canadian Standards Association (CSA), as amended from time to time
15 *(16)*	CSA B621	CSA Standard B621, "Selection and use of highway tanks, TC portable tanks, and other large containers for the transportation of dangerous goods, Classes 3, 4, 5, 6.1, 8, and 9", published by the Canadian Standards Association (CSA), as amended from time to time
16 *(17)*	CSA B622	CSA Standard B622, "Selection and use of highway tanks, TC portable tanks, and ton containers for the transportation of dangerous goods, Class 2", published by the Canadian Standards Association (CSA), as amended from time to time
17 *(18)*	CSA B625	CSA Standard B625, "Portable tanks for the transport of dangerous goods", published by the Canadian Standards Association (CSA), as amended from time to time
18 *(19)*	CSA B626	CSA Standard B626, "Portable tank Specification TC 44", published by the Canadian Standards Association (CSA), as amended from time to time
19 *(32)*	49 CFR	Parts 171 to 180 of Title 49 of the "Code of Federal Regulations" of the United States, as amended from time to time
20 *(20)*	ICAO Technical Instructions	"Technical Instructions for the Safe Transport of Dangerous Goods by Air", published by the International Civil Aviation Organization (ICAO), as amended from time to time
21 *(10)*	IMDG Code	Volumes 1 and 2 of the "International Maritime Dangerous Goods Code", published by the International Maritime Organization (IMO), as amended from time to time
22 *(21)*	ISO 2592	International Standard ISO 2592:2000(E), "Determination of flash and fire points – Cleveland open cup method", Second Edition, September 15, 2000, published by the International Organization for Standardization (ISO)
23 *(22)*	ISO 9328-2	International Standard ISO 9328-2, "Steel plates and strips for pressure purposes – Technical delivery conditions – Part 2: Unalloyed and low-alloyed steels with specified room temperature and elevated temperature properties", First Edition, December 1, 1991, published by the International Organization for Standardization (ISO)
24 *(23)*	ISO 10156	International Standard ISO 10156, "Gases and gas mixtures – Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets", Second Edition, February 15, 1996, published by the International Organization for Standardization (ISO)
25 *(24)*	ISO 10298	International Standard ISO 10298, "Determination of toxicity of a gas or gas mixture", First Edition, December 15, 1995, published by the International Organization for Standardization (ISO)
26 *(29)*	Manual of Tests and Criteria	"Recommendations on the Transport of Dangerous Goods: Manual of Tests and Criteria", published by the United Nations (UN), as amended from time to time
27 *(30)*	MIL-D-23119G	MIL-D-23119G, "Military Specification: Drums, Fabric, Collapsible, Liquid Fuel, Cylindrical, 500-Gallon Capacity", July 15, 1992, published by the United States Department of Defense

1.3.1 Table of Safety Standards and Safety Requirement Documents *continued*

Item *(French)*	*Column 1* Short Form	*Column 2* Safety Standard or Safety Requirement
28 *(31)*	MIL-T-52983G	MIL-T-52983G, "Military Specification: Tanks, Fabric, Collapsible: 3,000, 10,000, 20,000 and 50,000 Gallon, Fuel", May 11, 1994, published by the United States Department of Defense
29 *(25)*	OECD Guidelines 404	OECD Guidelines for the Testing of Chemicals No. 404, "Acute Dermal Irritation/Corrosion", April 24, 2002, published by the Organization for Economic Co-operation and Development (OECD)
30 *(26)*	OECD Guidelines 430	OECD Guidelines for the Testing of Chemicals No. 430, "*In Vitro* Skin Corrosion: Transcutaneous Electrical Resistance Test Method", July 26, 2013, published by the Organization for Economic Co-operation and Development (OECD)
31 *(27)*	OECD Guidelines 431	OECD Guidelines for the Testing of Chemicals No. 431, "*In Vitro* Skin Corrosion: reconstructed human epidermis (RHE) test method", July 26, 2013, published by the Organization for Economic Co-operation and Development (OECD)
32 *(28)*	OECD Guidelines 435	OECD Guideline for the Testing of Chemicals No. 435, "In Vitro Membrane Barrier Test Method for Skin Corrosion", July 19, 2006, published by the Organization for Economic Co-operation and Development (OECD)
33 *(34)*	Supplement to the ICAO Technical Instructions	"Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air", published by the International Civil Aviation Organization (ICAO), as amended from time to time
34 *(35)*	TP14850	Transport Canada Standard TP14850E, "Small Containers for Transport of Dangerous Goods, Classes 3, 4, 5, 6.1, 8 and, 9, a Transport Canada Standard", 2nd Edition, October 2010, published by the Department of Transport
35 *(36)*	TP14877	Transport Canada Standard TP 14877E, "Containers for Transport of Dangerous Goods by Rail, a Transport Canada Standard", January 2018, published by the Department of Transport
36 *(37)*	ULC Standard S504	National Standard of Canada CAN/ULC-S504-02, "Standard for Dry Chemical Fire Extinguishers", Second Edition, August 14, 2002, as amended January 2007, August 2007 and April 2009, published by Underwriters' Laboratories of Canada
37 *(38)*	ULC Standard S507	National Standard of Canada CAN/ULC-S507-05, "Standard for Water Fire Extinguishers"", Fourth Edition, February 28, 2005, as amended January 2007, published by Underwriters' Laboratories of Canada
38 *(39)*	ULC Standard S512	National Standard of Canada CAN/ULC-S512-M87, "Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers", April 1987, as amended March 1989, March 1990, April 1993, September 1996, September 1997 and April 1999, and reaffirmed February 2007, published by Underwriters' Laboratories of Canada
39 *(40)*	ULC Standard S554	National Standard of Canada CAN/ULC-S554-05, "Standard for Water Based Agent Fire Extinguishers", Second Edition, February 28, 2005, and reaffirmed 2010, published by Underwriters' Laboratories of Canada
40 *(33)*	UN Recommendations	"Recommendations on the Transport of Dangerous Goods", published by the United Nations (UN), as amended from time to time

1.3.2 Transitional Period

Six-month transition for certain safety standards

Despite section 1.3.1, if any of the following documents is amended after the coming into force of this section, instead of the current version of the document, the previous version of the document may be complied with for a period of six months after the day on which the current version is published:

(a) CGSB-43.123;

(b) CGSB-43.125;

(c) CGSB-43.126;

(d) CGSB-43.146;

(e) CGSB-43.151;

(f) CSA B339;

(g) CSA B340;

(h) CSA B341;

(i) CSA B342;

(j) CSA B620;

(k) CSA B621;

(l) CSA B622;

(m) CSA B625; and

(n) CSA B626.

1.3.3 Interpretation of TP 14877

For the purposes of TP 14877, "the coming into force of this Standard" and "the date this standard comes into force" must be read as "the coming into force of section 1.3.3 of the Regulations".

1.4 Definitions

In the following definitions, words that are also defined or that are variations of words that are defined are underlined. The meanings of the variations should be drawn from the defined terms. The meanings of other words that are not defined can be found in a dictionary or a scientific or technical handbook, journal or text or a similar publication.

The definitions in this section, which include the definitions from the Act, apply in these Regulations.

Act	means the "Transportation of Dangerous Goods Act, 1992".	*(Loi)*
adsorbed gas	means a gas that when packaged for transport is adsorbed onto a solid porous material resulting in an internal receptacle pressure of less than 101.3 kPa at 20°C and less than 300 kPa at 50°C.	*(gaz adsorbé)*
aerosol container	means an article consisting of any non-refillable means of containment that contains a substance under pressure and that is fitted with a selfclosing device that allows the contents to be ejected as **(a)** solid or liquid particles in suspension in a gas; **(b)** a foam, paste or powder; or **(c)** a liquid or gas.	*(bombe aérosol)*

1.4 Definitions *continued*

aircraft	means any machine capable of deriving support in the atmosphere from reactions of the air, other than a machine designed to derive support in the atmosphere from reactions against the earth's surface of air expelled from the machine, and includes a rocket.	*(aéronef)*
biological product	means a product that is derived from living organisms and that is used to prevent, treat or diagnose disease in humans or animals or for development, experiment or investigation purposes and includes finished or unfinished products, live vaccines or attenuated live vaccines.	*(produit biologique)*
CANUTEC	means the Canadian Transport Emergency Centre of the Department of Transport.	*(CANUTEC)*
capacity	means, for a means of containment used to contain **(a)** a liquid or a gas, the maximum volume of water, normally expressed in litres, that the means of containment can hold at 15°C and at an absolute pressure of 101.325 kPa; and **(b)** dangerous goods other than a liquid or a gas, the maximum volume, normally expressed in cubic metres, that the means of containment can hold.	*(capacité)*
cargo aircraft	means an aircraft, other than a passenger carrying aircraft, that is carrying goods or property.	*(aéronef cargo)*
carrier	means a person who, whether or not for hire or reward, has possession of dangerous goods while they are in transport.	*(transporteur)*
Category A	means an infectious substance that is transported in a form such that, when it is released outside of its means of containment and there is physical contact with humans or animals, it is capable of causing permanent disability or life-threatening or fatal disease to humans or animals.	*(catégorie A)*
Category B	means an infectious substance that does not meet the criteria for inclusion in Category A.	*(catégorie B)*
certification safety mark	means a design, symbol, device, letter, word, number or abbreviation that is displayed on a means of containment or means of transport to indicate compliance with a safety standard.	*(indication de danger – conformité)*
class	means, when the word "class" is followed by **(a)** one digit, the class of dangerous goods listed in the schedule to the Act; and **(b)** two digits separated by a point, the class of dangerous goods listed in the schedule to the Act and its division. *For example, Class 6.1 is division 1 of Class 6. Not all classes have divisions. Note that for explosives, as required in section 3.5, the compatibility letter must be next to the primary class number, for example, Class 1.1A or Class 1.4S.*	*(classe)*
classification	means, for dangerous goods, as applicable, the shipping name, the primary class, the compatibility group, the subsidiary class, the UN number, the packing group, and the infectious substance category.	*(classification)*

compatibility group — means one of the 13 groups of explosives described in Appendix 2 of Part 2, Classification. *(groupe de compatibilité)*

The compatibility group for each explosive listed in Schedule 1 is shown in column 3 of that Schedule beside the primary class of that explosive.

consignment — means a quantity of dangerous goods transported at the same time in one or more means of containment from one consignor at one location to one consignee at another location. *(envoi)*

consignor — means a person in Canada who *(expéditeur)*

(a) is named in a shipping document as the consignor;

(b) imports or who will import dangerous goods into Canada; or

(c) if paragraphs (a) and (b) do not apply, has possession of dangerous goods immediately before they are in transport.

A person may be both a consignor and a carrier of the same consignment, for example, a manufacturer who also transports the dangerous goods he or she produces.

consolidation bin — means a bin that is used in a road vehicle *(conteneur de groupage)*

(a) to secure one or more small means of containment so that, under normal conditions of transport, they will not shift in a way that might compromise their integrity; and

(b) to allow small means of containment to be added or removed during transport.

Unlike an overpack, a consolidation bin allows users to add or remove small means of containment during transport. A typical user of consolidation bins would be a delivery service that makes many deliveries in one route.

culture — means the result of a process by which pathogens in a specimen are intentionally propagated. This definition does not include specimens taken from a human or animal patient and that are intended to be processed in a laboratory. *(culture)*

Often, a specimen taken from a human or animal patient in a doctor's office, a clinic, a hospital or a lab is referred to by the health care professional as a "culture". In fact, such a specimen is usually intended to be sent to a laboratory where it will be manipulated or "cultured". It is packaged in such a way that the specimen itself will not deteriorate but any pathogens it contains will not "grow" during transport.

cylinder — means a small means of containment, other than an aerosol container, that is cylindrical or spherical in shape and that is capable of withstanding an internal absolute pressure of 275 kPa. *(bouteille à gaz)*

1.4 Definitions *continued*

dangerous goods
(from the Act)

means a product, substance or organism included by its nature or by the regulations in any of the classes listed in the schedule to the Act.

(marchandises dangereuses)

Schedule to the Act

Class 1
Explosives, including explosives within the meaning of the "Explosives Act"

Class 2
Gases: compressed, deeply refrigerated, liquefied or dissolved under pressure

Class 3
Flammable and combustible liquids

Class 4
Flammable solids; substances liable to spontaneous combustion; substances that on contact with water emit flammable gases

Class 5
Oxidizing substances; organic peroxides

Class 6
Poisonous (toxic) and infectious substances

Class 7
Nuclear substances, within the meaning of the "Nuclear Safety and Control Act", that are radioactive

Class 8
Corrosives

Class 9
Miscellaneous products, substances or organisms considered by the Governor in Council to be dangerous to life, health, property or the environment when handled, offered for transport or transported and prescribed to be included in this class

In these Regulations the words "Class 7, Radioactive Materials" are used rather than the words that are used in the schedule to the Act, "Class 7, Nuclear Substances within the meaning of the Nuclear Safety and Control Act, that are radioactive" so that the Regulations are more easily read in conjunction with international documents incorporated by reference in them.

dangerous goods safety mark

means a label, placard, orange panel, sign, mark, letter, word, number or abbreviation that is used to identify dangerous goods and to show the nature of the danger posed by them.

(indication de danger – marchandises dangereuses)

Director General

means the Director General of the Transport Dangerous Goods Directorate, Department of Transport.

(directeur général)

drum

means a flat-ended or convex-ended cylindrical means of containment made of metal, fibreboard, plastic or other similar material, with a maximum capacity of 450 L, or for a drum made of plywood, a maximum capacity of 250 L. This definition includes means of containment of other shapes such as pail-shaped or round with a tapered neck, but does not include a wood barrel or jerrican (that is, a means of containment of rectangular or polygonal cross-section).

(fût)

dust	means a mixture of solid particles and air in which 90 per cent or more of the solid particles have a diameter less than or equal to 10 µm. *The concentration of these suspended particles in air is measured as milligrams of solid particles per litre of air (mg/L).*	*(poussière)*
emergency	means an immediate danger to public safety **(a)** requiring the use of dangerous goods to avert or mitigate the danger; or **(b)** arising directly or indirectly from dangerous goods.	*(urgence)*
employer	means a person who **(a)** employs one or more individuals; or **(b)** provides the services of one or more individuals and from whom the individuals receive their remuneration.	*(employeur)*
ERAP	means an emergency response assistance plan.	*(PIU)*
farmer	means a person engaged in farming in Canada for commercial purposes.	*(agriculteur)*
farming	means the production of field-grown crops, cultivated and uncultivated and horticultural crops, the raising of livestock, poultry and fur-bearing animals, the production of eggs, milk, honey, maple syrup, tobacco, fibre and fodder crops, but does not include aquaculture.	*(agriculture)*
fire point	means the lowest temperature at which a substance will ignite and will continue to burn for at least 5 seconds.	*(point d'inflammation)*
flash point	means the lowest temperature at which the application of an ignition source causes the vapours of a liquid to ignite near the surface of the liquid or within a test vessel. *The flash point is determined using the closed-cup test method referred to in Chapter 2.3 of the UN Recommendations. See paragraph 2.18(1)(a) of Part 2, Classification.*	*(point d'éclair)*
fuel cell	means an electrochemical device that converts the chemical energy of a fuel to electrical energy, heat and reaction products.	*(pile à combustible)*
fuel cell cartridge	means an article that stores fuel for discharge into a fuel cell through one or more valves that control the discharge of the fuel into the fuel cell.	*(cartouche pour pile à combustible)*
fuel cell engine	means a device that is used to power equipment and that consists of a fuel cell and its fuel supply, whether integrated with or separate from the fuel cell, and includes all appurtenances necessary to fulfil its function.	*(moteur pile à combustible)*

1.4 Definitions *continued*

gas	means a substance that at 50°C has a vapour pressure greater than 300 kPa or that is completely gaseous at 20°C at an absolute pressure of 101.3 kPa and that is **(a)** compressed (other than in solution) so that when it is packaged under pressure for transport it remains entirely gaseous at 20°C; **(b)** liquefied so that when it is packaged for transport it is partially liquid at 20°C; **(c)** refrigerated so that when it is packaged for transport it is made partially liquid because of its low temperature; or **(d)** in solution so that when it is packaged for transport it is dissolved in a solvent.	*(gaz)*
gross mass	means **(a)** for a means of containment, the mass of the means of containment and all of its contents; or **(b)** for a quantity of dangerous goods, the gross mass of all minimum required means of containment used to contain the dangerous goods. *Reference to the minimum required means of containment (see paragraph 1.3(2)(j)) clarifies that, when dangerous goods are in portable tanks required or permitted by Part 5, Means of Containment, and the portable tanks are being transported in an ISO container or in a rail boxcar, the gross mass of the dangerous goods includes the dangerous goods and the portable tank but does not include the mass of the ISO container or the rail boxcar.*	*(masse brute)*
handling *(from the Act)*	means loading, unloading, packing or unpacking dangerous goods in a means of containment for the purposes of, in the course of or following transportation and includes storing them in the course of transportation.	*(manutention)*
import *(from the Act)*	means import into Canada, and includes transporting goods that originate from outside Canada and pass through Canada to a destination outside Canada, except when the goods are being transported on a vessel or aircraft not registered in Canada.	*(importer)*
infectious substance	means a substance known or reasonably believed to contain viable micro-organisms such as bacteria, viruses, rickettsia, parasites, fungi and other agents such as prions that are known or reasonably believed to cause disease in humans or animals and that are listed in Appendix 3 to Part 2, Classification, or that exhibit characteristics similar to a substance listed in Appendix 3.	*(matière infectieuse)*
inland voyage	has the same meaning as in subsection 100(1) of the "Cargo, Fumigation and Tackle Regulations".	*(voyage en eaux internes)*
inspector *(from the Act)*	means a person designated as an inspector under subsection 10(1) of the Act.	*(inspecteur)*
in standard	means that a means of containment meets the requirements set out in section 5.2 of Part 5, Means of Containment.	*(en règle)*

in transport	means that a person has possession of dangerous goods for the purposes of transportation or for the purposes of storing them in the course of transportation.	*(en transport)*
large means of containment	means a means of containment with a capacity greater than 450 L. *450 L is equivalent to 0.45 m^3 or 15.9 ft^3.*	*(grand contenant)*
LC_{50}	means the lowest concentration of gas, vapour, mist or dust that, when administered by continuous inhalation to both male and female young adult albino rats for one hour, results in the death within 14 days of one half of the animals. *The result is expressed in milligrams per litre (mg/L) of air for dust and mist, which are suspended particles, and in millilitres per cubic metre (mL/m^3) of air for gas and vapour.*	*(CL_{50})*
LD_{50} (dermal)	means the lowest amount of a substance that, when administered by continuous contact with the bare skin of both male and female young adult albino rabbits for 24 hours, results in the death within 14 days of one half of the animals. *The result is expressed in milligrams per kilogram (mg/kg) of body mass.*	*(DL_{50} – absorption cutanée)*
LD_{50} (oral)	means the lowest amount of a substance that, when administered by mouth to both male and female young adult albino rats, results in the death within 14 days of one half of the animals. *The result is expressed in milligrams per kilogram (mg/kg) of body mass.*	*(DL_{50} – ingestion)*
liquid	means a substance that **(a)** has a melting point less than or equal to 20°C at an absolute pressure of 101.3 kPa; or **(b)** is a viscous substance for which a specific melting point cannot be determined but that is determined to be a liquid in accordance with ASTM D 4359.	*(liquide)*
lithium content	means the mass of lithium in the anode of a lithium metal or lithium alloy cell.	*(quantité de lithium)*
means of containment *(from the Act)*	means a container or packaging, or any part of a means of transport that is or may be used to contain goods.	*(contenant)*
means of transport *(from the Act)*	means a road or railway vehicle, aircraft, vessel, pipeline or any other contrivance that is or may be used to transport persons or goods.	*(moyen de transport)*
Minister *(from the Act)*	means the Minister of Transport.	*(ministre)*
mist	means a mixture of liquid particles and air in which 90 per cent or more of the liquid particles have a diameter not greater than 10 µm. *The concentration of these suspended particles in air is measured as milligrams of liquid particles per litre of air (mg/L).*	*(brouillard)*

1.4 Definitions *continued*

net explosives quantity	means the net mass of explosives, excluding the mass of any means of containment. *Some explosives are articles and depend on the means of containment to achieve an explosive effect. This definition clarifies that, even in such a case, only the mass of explosives is counted. For fireworks, when the net explosives quantity is unknown, it can be calculated using special provision 4 or 5 of Schedule 2.*	*(quantité nette d'explosifs)*
neutron radiation detector	means a device that detects neutron radiation and includes a device in which a gas may be contained in a hermetically sealed electron tube transducer that converts neutron radiation into a measureable electric signal.	*(détecteur de rayonnement neutronique)*
offer for transport	means, for dangerous goods not in transport, to select or allow the selection of a carrier to transport the dangerous goods, to prepare or allow the preparation of the dangerous goods so that a carrier can take possession of them for transport or to allow a carrier to take possession of the dangerous goods for transport.	*(demande de transport)*
organization *(This definition reproduces the definition of "organization" in section 2 of the Criminal Code as incorporated in section 2 of the Act.)*	means **(a)** a public body, body corporate, society, company, firm, partnership, trade union or municipality; or **(b)** an association of persons that **(i)** is created for a common purpose, **(ii)** has an operational structure, and **(iii)** holds itself out to the public as an association of persons.	*(organisation)*
overpack	means an enclosure that is used by a single consignor to consolidate one or more small means of containment for ease of handling but that is not a minimum required means of containment. This definition does not include a large means of containment or a unit load device, as defined in the ICAO Technical Instructions, that is intended for transport by aircraft. *Examples of overpacks include* *(a) a pallet on which are placed or stacked one or more small means of containment that are secured by straps, shrink wrap, stretch wrap, nets or other similar means; and* *(b) a disposable box, crate or bin in which one or more small means of containment are placed.*	*(suremballage)*
packing group	means a group in which dangerous goods are included based on the inherent danger of the dangerous goods; Packing Group I indicates great danger, Packing Group II indicates medium danger and Packing Group III indicates minor danger.	*(groupe d'emballage)*

passenger	means **(a)** for a vessel, has the same meaning as in section 2 of the "Canada Shipping Act, 2001"; and **(b)** for a road vehicle, a railway vehicle or an aircraft, a person carried on board the means of transport but does not include **(i)** a crew member, **(ii)** a person who is accompanying dangerous goods or other cargo, **(iii)** an operator, owner or charterer of the means of transport, **(iv)** an employee of the operator, owner or charterer of the means of transport, who is acting in the course of employment, or **(v)** a person carrying out inspection or investigation duties under an Act of Parliament or of a provincial legislature.	*(passager)*
passenger carrying aircraft	means an aircraft that is carrying one or more passengers.	*(aéronef de passagers)*
passenger carrying railway vehicle	means a railway vehicle that is carrying one or more passengers.	*(véhicule ferroviaire de passagers)*
passenger carrying road vehicle	means a road vehicle that is carrying one or more passengers.	*(véhicule routier de passagers)*
passenger carrying vessel	means a vessel that is carrying one or more passengers.	*(bâtiment à passagers)*
permit for equivalent level of safety	means an authorization issued under section 31 of the Act to conduct an activity in compliance with the conditions of that authorization instead of with the requirements of these Regulations.	*(permis de niveau de sécurité équivalent)*
person *(from the Act)*	means an individual or an organization.	*(personne)*
prescribed *(from the Act)*	means prescribed by regulations of the Governor in Council.	*(version anglaise seulement)*
primary class	means the first class shown in column 3 of Schedule 1.	*(classe primaire)*
protective direction	means a direction issued under section 32 of the Act to cease an activity or to conduct other activities to reduce any danger to public safety.	*(ordre)*
public safety *(from the Act)*	means the safety of human life and health and of property and the environment.	*(sécurité publique)*
radiation detection system	means an apparatus that contains a radiation detector as a component.	*(système de détection des rayonnements)*
railway vehicle	means any vehicle that is designed to be drawn or propelled on rails by any power other than muscle power and that is being prepared for use or being used on rails.	*(véhicule ferroviaire)*

1.4 Definitions *continued*

release *(from the Act)*	means, in relation to dangerous goods, **(a)** a discharge, emission, explosion, outgassing or other escape of dangerous goods, or any component or compound evolving from dangerous goods, from the means of containment being used to handle or transport the dangerous goods; or **(b)** an emission, from a means of containment being used to handle or transport dangerous goods, of ionizing radiation that exceeds a level or limit established under the "Nuclear Safety and Control Act".	*(rejet)*
residue	means the dangerous goods remaining in a means of containment after its contents have been emptied to the maximum extent feasible and before the means of containment is either refilled or cleaned of dangerous goods and purged to remove any vapours.	*(résidu)*
road vehicle	means any vehicle that is designed to be drawn or propelled on land, including on ice roads, by any power other than muscle power and includes a machine designed to derive support in the atmosphere from reactions against the earth's surface of air expelled from the machine, but does not include a railway vehicle that operates exclusively on rails.	*(véhicule routier)*
ro-ro ship	has the same meaning as in section 1.2.1 of the IMDG Code.	*(navire roulier)*
safety mark *(from the Act)*	includes a design, symbol, device, sign, label, placard, letter, word, number or abbreviation, or any combination of these things, that is to be displayed **(a)** on dangerous goods, on means of containment or transport used in handling, offering for transport or transporting dangerous goods, or at facilities used in those activities; and **(b)** to show the nature of the danger or to indicate compliance with the safety standards prescribed for the means of containment or transport or the facilities. *See also certification safety mark and dangerous goods safety mark.*	*(indication de danger)*
safety requirements *(from the Act)*	means requirements for handling, offering for transport or transporting dangerous goods, for reporting those activities and for training persons engaged in those activities.	*(règles de sécurité)*
safety standards *(from the Act)*	means standards regulating the design, construction, equipping, functioning or performance of means of containment or facilities used or intended to be used in handling, offering for transport or transporting dangerous goods.	*(normes de sécurité)*
shipping document	means a document that relates to dangerous goods that are being handled, offered for transport or transported and that contains the information required by Part 3, Documentation, relating to the goods but does not include an electronic record.	*(document d'expédition)*
shipping name	means an entry in upper case letters (capitals) in column 2 of Schedule 1, but does not include any lower case descriptive text except for the purpose of determining the classification of dangerous goods.	*(appellation réglementaire)*

shipping record *(from the Act)*	means a record that relates to dangerous goods being handled, offered for transport or transported and that describes or contains information relating to the goods, and includes electronic records of information.	*(registre d'expédition)*
small means of containment	means a means of containment with a capacity less than or equal to 450 L. *450 L is equivalent to 0.45 m^3 or 15.9 ft^3.*	*(petit contenant)*
solid	means a substance that is not a liquid or a gas.	*(solide)*
special provision	means an item of Schedule 2 referred to in column 5 of Schedule 1.	*(disposition particulière)*
standardized means of containment *(from the Act)*	means a means of containment in relation to which a safety standard has been prescribed.	*(contenant normalisé)*
subsidiary class	means a class shown in parentheses in column 3 of Schedule 1.	*(classe subsidiaire)*
substance	includes an article.	*(matière)*
technical name	means the chemical name or another name currently used in a scientific or technical handbook, journal or text but does not include a trade name.	*(appellation technique)*
train	means **(a)** a train as defined in the "Canadian Rail Operating Rules", published by The Railway Association of Canada and approved by the Minister under the "Railway Safety Act" on January 16, 1990, as amended to July 1, 2000; or **(b)** a number of railway vehicles coupled together moving at a velocity exceeding 24 km/h (15 mph) with at least one railway vehicle providing propulsion and at least one railway vehicle containing dangerous goods for which a placard is required to be displayed in accordance with Part 4, Dangerous Goods Safety Marks.	*(train)*
transport index	has the same meaning as determined under the "Packaging and Transport of Nuclear Substances Regulations".	*(indice de transport)*
tube	means a large means of containment that is cylindrical in shape and that is capable of withstanding an internal absolute pressure of 12.4 MPa.	*(tube)*
Type P620 means of containment	means a means of containment that is in compliance with the requirements of CGSB-43.125 for Type P620 packaging or, if it is manufactured outside Canada, is in compliance with the requirements of Chapter 6.3 and Packing Instruction P620 of the UN Recommendations and the national regulations of the country of manufacture.	*(contenant de type P620)*

1.4 Definitions *continued*

Type P650 means of containment	means a means of containment that is in compliance with the requirements of CGSB-43.125 for Type P650 packaging or, if it is manufactured outside Canada, is in compliance with the requirements of Packing Instruction P650 of the UN Recommendations and the national regulations of the country of manufacture.	*(contenant de type P650)*
UN number	means an entry in column 1 of Schedule 1.	*(numéro UN)*
UN standardized means of containment	means a means of containment that meets the requirements set out in section 5.6 of Part 5, Means of Containment.	*(contenant normalisé UN)*
vapour	means the dispersion in air of imperceptible particles of a substance that is liquid or solid in its normal state. *For example, water vapour or benzene vapour.*	*(vapeur)*
vessel *(from the Act)*	has the same meaning as in section 2 of the "Canada Shipping Act, 2001".	*(bâtiment)*
watt-hour or Wh	the electrical energy developed by a power of 1 watt (W) during 1 hour (h) and expressed as watt-hour (Wh).	*(wattheure ou Wh)*

General Provisions

Subsections 1.5.1(2) and 1.6(3) refer to a conflict between requirements. A conflict is not the same as a difference. There is a difference between two provisions if they are not exactly the same but both can be satisfied at the same time. There is a conflict between two provisions if it is impossible for both provisions to be satisfied at the same time.

For example, if Provision A requires a tank wall to exceed 1 mm in thickness and Provision B requires the same tank wall to exceed 2 mm in thickness, there is a difference between the two provisions but there is no conflict because both provisions can be satisfied at the same time if the tank wall exceeds 2 mm in thickness.

However, if Provision A prohibits a tank wall from exceeding 1 mm in thickness and Provision B requires the same tank wall to exceed 2 mm in thickness, there is a conflict between the two provisions because it is impossible for the tank wall to be less than or equal to 1 mm in thickness while at the same time exceeding 2 mm in thickness.

1.5 Applicability of the Regulations

Requirement to comply

Unless otherwise stated in sections 1.15 to 1.48 of this Part or in Schedule 1 or 2, dangerous goods must be handled, offered for transport or transported in accordance with these Regulations.

1.5.1 Schedule 2: Special Provisions

Application of special provisions

(1) When there is a special provision in Schedule 2 for dangerous goods, that special provision applies.

(2) When there is a conflict between a special provision in Schedule 2 and other provisions in these Regulations, the special provision applies.

1.5.2 Schedules 1 and 3: Forbidden Dangerous Goods

Dangerous goods forbidden for transport

(1) When the word "Forbidden" is shown for dangerous goods in column 3 of Schedule 1 or column 2 of Schedule 3, a person must not handle, offer for transport or transport the dangerous goods.

(2) When the word "Forbidden" is shown for dangerous goods in column 8 or 9 of Schedule 1, a person must not offer for transport or transport the dangerous goods by the means of transport set out in the heading of that column.

1.6 Schedule 1: Quantity Limits in Columns 8 and 9

Quantity limits for transport

(1) When there is a number shown in column 8 of Schedule 1, that number is a quantity limit per means of containment for the corresponding dangerous goods in column 2. A person must not load onto a passenger carrying vessel, or transport on a road vehicle or a railway vehicle on board a passenger carrying vessel, dangerous goods that exceed the quantity limit. Dangerous goods exceed the quantity limit if

- solids

(a) in the case of a solid, they have a mass that is greater than the number when that number is expressed in kilograms;

- liquids

(b) in the case of a liquid, they have a volume that is greater than the number when that number is expressed in litres;

- gases

(c) in the case of a gas, including a gas in a liquefied form, they are contained in a means of containment the capacity of which is greater than the number when that number is expressed in litres; and

- explosives

(d) in the case of an explosive

(i) not subject to special provision 85 or 86, they have a net explosives quantity that is greater than the number when that number is expressed in kilograms, or

(ii) subject to special provision 85 or 86, they exceed 100 articles.

Quantity limits for transport by passenger vehicle

(2) When there is a number shown in column 9 of Schedule 1, that number is a quantity limit per means of containment for the corresponding dangerous goods in column 2. A person must not offer for transport or transport by passenger carrying road vehicle or passenger carrying railway vehicle dangerous goods that exceed the quantity limit. Dangerous goods exceed the quantity limit if

- solids

(a) in the case of a solid, they have a mass that is greater than the number when that number is expressed in kilograms;

- liquids

(b) in the case of a liquid, they have a volume that is greater than the number when that number is expressed in litres;

- gases

(c) in the case of a gas, including a gas in a liquefied form, they are contained in a means of containment the capacity of which is greater than the number when that number is expressed in litres; and

- explosives

(d) in the case of an explosive

(i) not subject to special provision 85 or 86, they have a net explosives quantity that is greater than the number when that number is expressed in kilograms, or

(ii) subject to special provision 85 or 86, they exceed 100 articles.

Quantity limits in Schedule 1 take precedence

(3) If a quantity limit in column 8 or 9 of Schedule 1 conflicts with any other quantity limit in these Regulations, other than a quantity limit in special provisions, the quantity limit in that column takes precedence.

1.7 Safety Requirements, Documents, Safety Marks

Requirement to comply

As provided for in section 5 of the Act, a person must not handle, offer for transport, transport or import dangerous goods unless

- safety requirements

(a) the person complies with all applicable prescribed safety requirements;

- documents

(b) the dangerous goods are accompanied by all applicable prescribed documents; and

- safety standards and safety marks

(c) the means of containment and transport comply with all applicable prescribed safety standards and display all applicable prescribed safety marks.

1.8 Prohibition: Explosives

Prohibited explosives

A person must not handle, offer for transport or transport dangerous goods by any means of transport if the dangerous goods are explosives and

(a) are in direct contact with a large means of containment, except when the explosives are to be transported by road vehicle in quantities that are allowed for explosives in section 9.5, Part 9, Road, in Schedule 1 or in any special provision in Schedule 2; or

(b) are also radioactive materials.

1.9 *Repealed*

1.10 Requirements Respecting the Transportation of Dangerous Goods on Board Passenger Carrying Vessels

Dangerous goods on passenger carrying vessels

(1) The requirements of these Regulations respecting the transportation of dangerous goods other than explosives on board a passenger carrying vessel apply to a passenger carrying vessel that is transporting more than 25 passengers or more than one passenger for each 3 m of the length of the vessel.

(2) The requirements of these Regulations respecting the transportation of dangerous goods that are explosives on board a passenger carrying vessel apply to a passenger carrying vessel that is transporting more than 12 passengers.

1.11 Use of 49 CFR for Non-regulated Dangerous Goods

Goods regulated in U.S. but not in Canada

When a substance is regulated in the United States by 49 CFR but is not regulated in Canada by these Regulations, a person may transport the substance between Canada and the United States by road vehicle or railway vehicle in accordance with all or part of 49 CFR.

This means that, for example, the safety marks displayed in accordance with 49 CFR would not be considered misleading.

1.12 Evidence: Safety Marks, Prescribed Documents

Evidence in prosecution

As provided for in section 42 of the Act, in any prosecution for an offence, evidence that a means of containment or transport bore a safety mark or was accompanied by a prescribed document is, in the absence of evidence to the contrary, proof of the information shown or indicated by the safety mark or contained in the prescribed document.

1.13 Defence: Due Diligence

Reasonable measures to comply

As provided for in section 40 of the Act, a person must not be found guilty of an offence if it is established that the person took all reasonable measures to comply with the Act or to prevent the commission of the offence.

1.14 *Repealed*

Special Cases

A number of the following sections provide exemptions for dangerous goods based on the gross mass of the dangerous goods. When appropriate, the text ensures that the exemption applies to the total of the gross masses of all of the dangerous goods on the means of transport. This means that a person who takes advantage of section 1.15 to transport 150 kg gross mass of dangerous goods on a road vehicle could not also claim the 500 kg gross mass exemption set out in section 1.16 when adding an additional 450 kg gross mass of dangerous goods (whether or not they are the same dangerous goods). Indeed, were the 450 kg gross mass added, none of the resulting 600 kg gross mass could be claimed under either the 150 kg gross mass exemption or the 500 kg gross mass exemption.

Similarly, a person who takes advantage of an exemption set out in section 1.16 to transport 300 kg gross mass of flammable liquids on a road vehicle cannot, when adding an additional 350 kg gross mass of corrosives, claim any of the resulting 650 kg gross mass as exempted under section 1.15 or 1.16.

1.15 150 kg Gross Mass Exemption

150 kg or less exempt from certain requirements

(1) 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 to the handling, offering for transport or transporting of dangerous goods on a road vehicle, a railway vehicle or a vessel on a domestic voyage if

- container standards

(a) in the case of

(i) dangerous goods included in Class 2, Gases, they are in one or more small means of containment in compliance with the requirements for transporting gases in Part 5 (Means of Containment), except that, in the case of dangerous goods that are UN1950, AEROSOLS, or UN2037, GAS CARTRIDGES, the requirement in section 8.1.7 of CGSB-43.123 that aerosol containers and gas cartridges be tightly packed in a strong outer packaging does not apply, or

(ii) dangerous goods not included in Class 2, Gases, they are in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety;

- maximum quantity each container

(b) except for dangerous goods included in Class 2, Gases, the dangerous goods are contained in one or more means of containment each of which has a gross mass less than or equal to 30 kg;

- total maximum quantity

(c) the gross mass of all dangerous goods

(i) transported on the road vehicle or the railway vehicle is less than or equal to 150 kg, and

(ii) transported on the vessel on a domestic voyage is less than or equal to 150 kg, excluding dangerous goods in a road vehicle or railway vehicle being transported on the vessel; and

- total maximum quantity

(d) the dangerous goods are in a quantity or concentration available to the general public and are transported

(i) by a user or purchaser of the dangerous goods, or

(ii) by a retailer to or from a user or purchaser of the dangerous goods.

Exemption does not apply to certain dangerous goods

(2) Subsection (1) does not apply to dangerous goods that

(a) are in a quantity or concentration that requires an ERAP;

(b) require a control or emergency temperature;

(c) are included in Class 1, Explosives, except for UN numbers UN0012, UN0014, UN0044, UN0055, UN0105, UN0131, UN0161, UN0173, UN0186, UN0191, UN0197, UN0276, UN0312, UN0323, UN0335 if classified as a consumer firework, UN0336, UN0337, UN0351, UN0373, UN0378, UN0404, UN0405, UN0431, UN0432, UN0454, UN0499, UN0501, UN0503, UN0505 to UN0507, UN0509 and UN0510;

(d) are included in Class 2.1, Flammable Gases, and are in a cylinder with a capacity greater than 46 L;

(e) are included in Class 2.3, Toxic Gases;

(f) are included in Class 4, Flammable Solids; Substances Liable to Spontaneous Combustion; Substances that on Contact with Water Emit Flammable Gases (Water-reactive Substances); and in Packing Group I;

(g) are included in Class 5.2, Organic Peroxides, unless they are allowed to be transported as limited quantities in accordance with section 1.17 and column 6(a) of Schedule 1;

(h) are liquids included in Class 6.1, Toxic Substances, and Packing Group I;

(i) are included in Class 6.2, Infectious Substances; or

(j) are included in Class 7, Radioactive Materials, and are required to be licensed by the Canadian Nuclear Safety Commission.

1.16 500 kg Gross Mass Exemption

500 kg or less exempt from certain requirements

(1) Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks) and Part 5 (Means of Containment) do not apply to the handling, offering for transport or transporting of dangerous goods on a road vehicle, a railway vehicle or a vessel on a domestic voyage if

- container standards

(a) in the case of

(i) dangerous goods included in Class 2, Gases, they are in one or more small means of containment in compliance with the requirements for transporting gases in Part 5, Means of Containment, or

(ii) dangerous goods not included in Class 2, Gases, they are in one or more means of containment

(A) each of which has a gross mass less than or equal to 30 kg and that is designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety, or

(B) that are drums in compliance with the requirements of section 5.12 of Part 5, Means of Containment, for transporting dangerous goods in drums;

- total maximum quantity

(b) the gross mass of all dangerous goods

(i) transported on the road vehicle or the railway vehicle is less than or equal to 500 kg, and

(ii) transported on the vessel on a domestic voyage is less than or equal to 500 kg, excluding the dangerous goods in a road vehicle or railway vehicle being transported on the vessel;

1.16 500 kg Gross Mass Exemption *continued*

(c) each means of containment has displayed on one side, other than a side on which it is intended to rest or to be stacked during transport, *- safety marks required*

(i) the dangerous goods safety marks required by Part 4, Dangerous Goods Safety Marks, or

(ii) for dangerous goods, other than dangerous goods included in Class 2, Gases, the shipping name of the dangerous goods and the marks required for them in one of the following Acts and regulations, as long as those marks are legible and visible during handling and transporting in the same manner as dangerous goods safety marks:

(A) the "Pest Control Products Act" and its regulations, or

(B) the "Hazardous Products Act" and its regulations;

(d) the dangerous goods are accompanied by a shipping document or document that is located, for a road or railway vehicle or a vessel, in accordance with the requirements for location of a shipping document in sections 3.7 to 3.9 of Part 3, Documentation; and *- shipping document required*

(e) any document referred to in paragraph (d), other than a shipping document, includes the following information in the following order: *- information required on shipping document*

(i) the primary class of the dangerous goods, following the word "Class" or "Classe", and

(ii) the total number of means of containment, on which a dangerous goods safety mark is required to be displayed, for each primary class, following the words "number of means of containment" or "nombre de contenants".

For example,
Class 3, number of means of containment, 10
Class 8, number of means of containment, 12

(2) Subsection (1) does not apply to dangerous goods that *Exemption does not apply to certain dangerous goods*

(a) are in a quantity or concentration that requires an ERAP;

(b) require a control or emergency temperature;

(c) are included in Class 1, Explosives, except for

(i) explosives included in Class 1.4S, or

(ii) UN numbers UN0191, UN0197, UN0276, UN0312, UN0336, UN0403, UN0431, UN0453 and UN0493;

(d) are included in Class 2.1, Flammable Gases, and are in a cylinder with a capacity greater than 46 L;

(e) are included in Class 2.3, Toxic Gases;

(f) are included in Class 4, Flammable Solids; Substances Liable to Spontaneous Combustion; Substances that on Contact with Water Emit Flammable Gases (Water-reactive Substances); and in Packing Group I;

(g) are included in Class 5.2, Organic Peroxides, unless they are allowed to be transported as limited quantities in accordance with section 1.17 and column 6(a) of Schedule 1;

(h) are liquids included in Class 6.1, Toxic Substances, and Packing Group I;

(i) are included in Class 6.2, Infectious Substances; or

(j) are included in Class 7, Radioactive Materials, and are required to be licensed by the Canadian Nuclear Safety Commission.

1.17 Limited Quantities Exemption

Limited quantity - definition - container standards

(1) A quantity of dangerous goods, other than explosives, is a limited quantity if

(a) the dangerous goods are in one or more means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety; and

- maximum quantity

(b) 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

(i) if solids, have a mass that is less than or equal to the number shown in column 6(a) of Schedule 1, when that number is expressed in kilograms,

(ii) if liquids, have a volume that is less than or equal to the number shown in column 6(a) of Schedule 1, when that number is expressed in litres, or

(iii) if gases, including a gas in a liquefied form, are contained in one or more means of containment each of which has a capacity less than or equal to the number shown in column 6(a) of Schedule 1, when that number is expressed in litres.

Limited quantities exempt from certain requirements

(2) 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 to the handling, offering for transport or transporting of limited quantities of dangerous goods on a road vehicle, a railway vehicle or a vessel on a domestic voyage if each means of containment is legibly and durably marked on one side, other than a side on which it is intended to rest or to be stacked during transport, with the mark illustrated in subsection (5).

Marking may not required on inner container

(3) When a limited quantity of dangerous goods is in a means of containment that is inside another means of containment, the inner means of containment is not required to be marked if

(a) the gross mass of the outer means of containment is less than or equal to 30 kg;

(b) the outer means of containment is not intended to be opened during transport; and

(c) the outer means of containment is legibly and visibly marked, on a contrasting background, with the mark illustrated in subsection (5).

Overpack

(4) When a limited quantity of dangerous goods is in a means of containment that is inside an overpack, the following information must be displayed on the overpack unless the marks on the small means of containment are visible through the overpack:

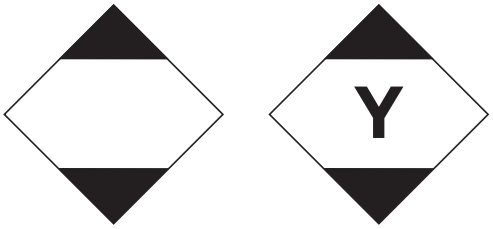
(a) the word “Overpack” or “Suremballage”; and

(b) the mark illustrated in subsection (5), legibly and visibly marked on a contrasting background.

1.17 Limited Quantities Exemption *continued*

Overpack mark

(5) The mark is a square on point, and the line forming the square on point must be at least 2 mm wide. The top and bottom portions must be black and the central portion must be white or a contrasting colour. Each side of the mark must be at least 100 mm long. The letter "Y" may be displayed in the centre of the mark if the limited quantity is in compliance with the ICAO Technical Instructions. If the size of the means of containment so requires, the length of each side may be reduced to not less than 50 mm, provided that the mark remains clearly visible.



Alternate markings

(6) Until December 31, 2020, instead of being marked with the mark illustrated in subsection (5), a means of containment may have displayed on it

(a) the words "Limited Quantity" or "quantité limitée";

(b) the abbreviation "Ltd. Qty." or "quant. ltée";

(c) the words "Consumer Commodity" or "bien de consommation"; or

(d) the UN number of each limited quantity of dangerous goods preceded by the letters "UN", placed within a square on point.

Specifications for overpack mark

(7) For the purposes of paragraph 6(d), the line forming the square on point must be black and be at least 2 mm wide. If the dangerous goods have different UN numbers, the square on point must be large enough to include each UN number, but in any case each side must be not less than 50 mm long. The UN numbers and letters must be at least 6 mm high. The line, UN numbers and letters must be on a contrasting background.

1.17.1 Excepted Quantities Exemption

Excepted quantities - definition

(1) A quantity of dangerous goods, other than explosives, is an excepted quantity if

(a) the dangerous goods are in an inner means of containment and an outer means of containment that are designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety;

(b) any of the dangerous goods in the inner means of containment,

(i) if solids, have a mass that is less than or equal to the number shown in column 1 of the table to subsection (2) for the corresponding alphanumeric code in column 6(b) of Schedule 1, when that number is expressed in grams,

(ii) if liquids, have a volume that is less than or equal to the number shown in column 1 of the table to subsection (2) for the corresponding alphanumeric code in column 6(b) of Schedule 1, when that number is expressed in millilitres, or

(iii) if gases, including a gas in a liquefied form, are contained in one or more means of containment each of which has a capacity less than or equal to the number shown in column 1 of the table to subsection (2) for the corresponding alphanumeric code in column 6(b) of Schedule 1, when that number is expressed in millilitres; and

(c) any of the dangerous goods in the outer means of containment,

(i) if solids, have a mass that is less than or equal to the number shown in column 2 of the table to subsection (2) for the corresponding alphanumeric code in column 6(b) of Schedule 1, when that number is expressed in grams,

(ii) if liquids, have a volume that is less than or equal to the number shown in column 2 of the table to subsection (2) for the corresponding alphanumeric code in column 6(b) of Schedule 1, when that number is expressed in millilitres, or

(iii) if gases, including a gas in a liquefied form, are contained in one or more means of containment each of which has a capacity less than or equal to the number shown in column 2 of the table to subsection (2) for the corresponding alphanumeric code in column 6(b) of Schedule 1, when that number is expressed in millilitres.

- maximums

(2) When dangerous goods in excepted quantities for which different alphanumeric codes are assigned are together in an outer means of containment, the total quantity of dangerous goods must not exceed the lowest maximum net quantity per outer means of containment that is set out in column 2 of the table to this subsection for any of the dangerous goods.

TABLE: Excepted Quantities

Alphanumeric Code	***Column 1*** Maximum net quantity per inner means of containment (in g for solids and mL for liquids and gases)	***Column 2*** Maximum net quantity per outer means of containment (in g for solids and mL for liquids and gases, or sum of g and mL in the case of mixed packing)
E0	Not permitted as Excepted Quantity	
E1	30	1,000
E2	30	500
E3	30	300
E4	1	500
E5	1	300

- exemptions and mark

(3) 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 to the handling, offering for transport or transporting of dangerous goods in excepted quantities if each means of containment is marked on one side, other than a side on which it is intended to rest or to be stacked during transport, with the excepted quantities mark illustrated below.

Excepted Quantities Mark

Black or red: Hatching around edge of square and symbol

White (or a colour that contrasts, as applicable, with black or red): Background

Size: Square, and each side must be at least 100 mm

The symbol is a stylized capital E enclosed in a circle and all three cross bars of the letter E must touch the perimeter of the circle

Replace * with the primary class

Replace ** with the name of the consignor or the consignee

1.17.1 Excepted Quantities Exemption *continued*

(4) When dangerous goods in excepted quantities are in a means of containment that is inside an overpack, the following information must be displayed on the overpack, unless that information is on the means of containment and is visible through the overpack: *- overpack*

(a) the word "Overpack" or "Suremballage"; and

(b) the mark illustrated in subsection (3).

(5) The number of outer means of containment containing dangerous goods in excepted quantities on a road vehicle, a railway vehicle or an intermodal container must not exceed 1,000. *- maximum outer containers*

(6) When dangerous goods in excepted quantities are in an inner means of containment that is inside an outer means of containment, the inner means of containment is not required to be marked in accordance with subsection (3) if *- inner and outer containers*

(a) the outer means of containment is not intended to be opened during transport; and

(b) the outer means of containment is marked, legibly and visibly on a contrasting background, with the mark illustrated in that subsection.

(7) If a shipping document or any other document accompanies dangerous goods in excepted quantities, the document must include the words "dangerous goods in excepted quantities" or "marchandises dangereuses en quantités exceptées" and must indicate the number of outer means of containment. *- document*

(8) 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 dangerous goods in excepted quantities that are assigned to alphanumeric codes E1, E2, E4 and E5 in column 6(b) of Schedule 1 if *- very small quantities*

(a) the net quantity of the dangerous goods per inner means of containment is less than or equal to 1 g for solids or 1 mL for liquids and gases; and

(b) the net quantity of the dangerous goods per outer means of containment is less than or equal to 100 g for solids or 100 mL for liquids and gases.

1.18 Medical Device or Article

These Regulations do not apply to the transport on a road vehicle, a railway vehicle or a vessel on a domestic voyage of *Medical exemption*

(a) a medical device, wheelchair or medical article if *- devices and articles*

(i) the medical device is attached to or implanted in an individual or an animal, or

(ii) the wheelchair or medical article is in transport and is intended for the personal use of a specific individual,

(b) a radio-pharmaceutical that has been injected in or ingested by an individual or an animal. *- radioactive pharmaceuticals*

1.19 Samples for Inspection or Investigation Exemption

Samples for government inspection or investigation

These Regulations do not apply to samples of goods, including forensic samples, that are reasonably believed to be dangerous goods if, for the purposes of inspection or investigation duties under an Act of Parliament or of a provincial legislature, the samples are

- under government supervision

(a) in transport under the direct supervision of a federal, provincial or municipal government employee acting in the course of employment; and

- securely contained

(b) in one or more means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

1.19.1 Samples Classifying, Analysing or Testing Exemption

Sample of unknown classification or composition

Part 2 (Classification), Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training) and Part 7 (Emergency Response Assistance Plan) do not apply to samples of goods that the consignor reasonably believes to be dangerous goods, but the classification or the exact chemical composition of the goods is unknown and cannot be readily determined if

(a) in the case of

(i) samples that are reasonably believed to be a gas, including a gas in a liquefied form, they are in one or more means of containment in compliance with the requirements for transporting gases in Part 5, Means of Containment, or

(ii) samples that are reasonably believed not to be a gas, they are in one or more means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety;

(b) the samples are in transport for the purposes of classifying, analysing or testing;

(c) the samples are believed not to contain explosives, infectious substances or radioactive materials;

(d) the dangerous goods are contained in one or more means of containment each of which has a gross mass less than or equal to 10 kg;

(e) the samples are accompanied by a document that includes the name and address of the consignor and the words “test samples” or “échantillons d’épreuve”; and

(f) each means of containment has marked on it the words “test samples” or “échantillons d’épreuve” and the words are legible and displayed on a contrasting background.

1.19.2 Samples Demonstration Exemption

Samples intended for demonstration

Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, do not apply to samples of dangerous goods if

(a) in the case of

(i) samples included in Class 2, Gases, they are in one or more means of containment in compliance with the requirements for transporting gases in Part 5, Means of Containment, or

(ii) samples not included in Class 2, Gases, they are in one or more means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety;

(b) the samples are in transport for demonstration purposes;

(c) the samples are in the custody of an agent of the manufacturer or distributor who is acting in the course of employment;

(d) the samples are not for sale;

(e) the samples are not transported in a passenger carrying road vehicle, passenger carrying railway vehicle, passenger carrying aircraft or passenger carrying vessel other than a passenger carrying vessel that operates over the most direct water route between two points that are not more than 5 km apart;

(f) the dangerous goods are contained in one or more means of containment each of which has a gross mass less than or equal to 10 kg; and

(g) each means of containment has marked on it the words "demonstration samples" or "échantillons de démonstration" and the words are legible and displayed on a contrasting background.

1.20 National Defence

Military exemption

For the purposes of paragraph 3(4)(a) of the Act, any activity or thing related to the transportation of dangerous goods is under the sole direction or control of the Minister of National Defence if the dangerous goods are in or on a means of transport

- Department of National Defence

(a) owned and operated by the Department of National Defence or operated on behalf of the Department of National Defence by

(i) an employee of the Department of National Defence,

(ii) a member of the Canadian Forces, or

(iii) civilian personnel who are not employed by the Department of National Defence if the means of transport is accompanied at all times by, and is under the direct responsibility of, an employee of the Department of National Defence or a member of the Canadian Forces;

- NATO member

(b) owned and operated by the military establishment of a member country of the North Atlantic Treaty Organization or operated on behalf of such an establishment by

(i) military or civilian personnel of that establishment, or

(ii) civilian personnel who are not employed by that establishment if the means of transport is accompanied at all times by, and is under the direct responsibility of, military or civilian personnel of that establishment; or

(c) owned and operated by the military establishment of another country under an agreement with the Department of National Defence or operated on behalf of such an establishment by

- another country

(i) military or civilian personnel of that establishment, or

(ii) civilian personnel who are not employed by that establishment if the means of transport is accompanied at all times by, and is under the direct responsibility of, military or civilian personnel of that establishment.

1.21 Agriculture: 1,500 kg Gross Mass Farm Vehicle Exemption

Agricultural goods on a farm vehicle

(1) Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment) and Part 6 (Training) do not apply to the handling, offering for transport or transporting of dangerous goods on a road vehicle licensed as a farm vehicle if

(a) in the case of

(i) dangerous goods included in Class 2, Gases, they are in one or more means of containment in compliance with the requirements for transporting gases in Part 5, Means of Containment, or

(ii) dangerous goods not included in Class 2, Gases, they are in one or more means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety;

(b) the gross mass of all dangerous goods on the road vehicle is less than or equal to 1,500 kg;

(c) the dangerous goods are to be or have been used by a farmer for farming purposes;

(d) the dangerous goods are transported solely on land and the distance on public roads is less than or equal to 100 km; and

(e) the dangerous goods do not include

(i) Class 1, Explosives, other than explosives included in Class 1.4S,

(ii) Class 2.1, Flammable Gases, in a cylinder with a capacity greater than 46 L,

(iii) Class 2.3, Toxic Gases,

(iv) Class 6.2, Infectious Substances, or

(v) Class 7, Radioactive Materials.

(2) Despite the exemption from Part 3, Documentation, in subsection (1), when an ERAP is required under Part 7, Emergency Response Assistance Plan, the dangerous goods for which the plan is required must be accompanied by a shipping document.

1.22 Agriculture: 3,000 kg Gross Mass Farm Retail Exemption

Agricultural goods on a road vehicle

(1) Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks) and Part 5 (Means of Containment) do not apply to the handling, offering for transport or transporting of dangerous goods on a road vehicle if

(a) in the case of

(i) dangerous goods included in Class 2, Gases, they are in one or more means of containment in compliance with the requirements for transporting gases in Part 5, Means of Containment, or

(ii) dangerous goods not included in Class 2, Gases, they are in one or more means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety;

(b) the dangerous goods are transported solely on land between a retail place of purchase and place of destination and the distance on public roads is less than or equal to 100 km;

(c) the gross mass of all dangerous goods on the road vehicle is less than or equal to 3,000 kg;

(d) the dangerous goods are to be or have been used by a farmer for farming purposes; and

- no exemption for certain dangerous goods

(e) the dangerous goods do not include

(i) Class 1, Explosives, other than explosives included in Class 1.4S,

(ii) Class 2.1, Flammable Gases, in a cylinder with a capacity greater than 46 L,

(iii) Class 2.3, Toxic Gases,

(iv) Class 6.2, Infectious Substances, or

(v) Class 7, Radioactive Materials.

(2) Despite the exemption from Part 3, Documentation, in subsection (1), when an ERAP is required under Part 7, Emergency Response Assistance Plan, the dangerous goods for which the plan is required must be accompanied by a shipping document.

1.23 Agriculture: Pesticide Exemption

Pesticides on a road vehicle

(1) Part 3, Documentation, the requirements for the display of a UN number in section 4.15 of Part 4, Dangerous Goods Safety Marks, and Part 6, Training, do not apply to a solution of pesticides in transport on a road vehicle if

- up to 100 km

(a) the dangerous goods are transported solely on land for a distance less than or equal to 100 km;

- up to 6,000 L

(b) the dangerous goods are in a large means of containment that

(i) has a capacity that is less than or equal to 6,000 L, and

(ii) is used to prepare the dangerous goods for application or to apply the dangerous goods; and

- one large container

(c) only one large means of containment containing the solution of pesticides is in transport on the road vehicle.

Shipping document when ERAP required

(2) Despite the exemption for documentation in subsection (1), when an ERAP is required under Part 7, Emergency Response Assistance Plan, the dangerous goods must be accompanied by a shipping document.

1.24 Agriculture: Anhydrous Ammonia Exemption

Anhydrous ammonia

Part 3, Documentation, and Part 7, Emergency Response Assistance Plan, do not apply to UN1005, ANHYDROUS AMMONIA, if it is

(a) in transport solely on land and the distance on public roads is less than or equal to 100 km; and

- up to 10,000 L for field application

(b) in a large means of containment with a capacity that is less than or equal to 10,000 L and is used for the field application of anhydrous ammonia.

1.25 Transportation within a Facility

Limited public access

These Regulations do not apply to dangerous goods that are transported solely within a manufacturing or processing facility to which public access is controlled.

1.26 Emergency Response Exemption

Dangerous goods for emergency response

These Regulations do not apply to dangerous goods that are in quantities necessary to respond to an emergency that endangers public safety and that are in transport in a means of transport that is dedicated to emergency response, unless the dangerous goods are forbidden for transport in Schedule 1, Schedule 3 or, for transport by aircraft, the ICAO Technical Instructions.

1.27 Operation of a Means of Transport or a Means of Containment Exemption

Dangerous goods necessary for safety or operation

(1) These Regulations do not apply to dangerous goods on a means of transport that are required for

(a) the propulsion of the means of transport and that are

(i) intended to remain on the means of transport until used, and

(ii) contained in a fuel tank permanently installed on the means of transport;

(b) the safety of individuals on board the means of transport;

(c) the operation or safety of the means of transport including, while installed in the means of transport and used or likely to be used for purposes related to transport, air bags, air brakes, flares, lighting, shock absorbers or fire extinguishers; or

(d) ventilation, refrigeration or heating units that are necessary to maintain environmental conditions within a means of containment in transport on the means of transport and are intended to remain with the units or on the means of transport until used.

(2) The exemption in subsection (1) does not apply to

(a) ammunition; or

(b) dangerous goods being delivered to a destination and from which a portion is drawn off during transport for propulsion of the means of transport.

Paragraph (b) is intended to exclude from this exemption dangerous goods that are in transport on a means of transport and from which a portion is used to propel the means of transport. An example is a tank truck delivering liquefied natural gas that uses part of that load of gas to propel the vehicle.

1.28 Transportation between Two Properties

Transport between two properties

These Regulations do not apply to dangerous goods, other than Class 1, Explosives, or Class 7, Radioactive Materials, that are in transport on a road vehicle between two properties owned or leased by the manufacturer, producer or user of the dangerous goods if

- up to 3 km

(a) the dangerous goods are transported a distance less than or equal to 3 km on a public road;

- placard

(b) the road vehicle has displayed on it

(i) the placard for the primary class of each of the dangerous goods, or

(ii) the DANGER placard;

- securely contained

(c) the dangerous goods are in one or more means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety; and

- advise provincial authority

(d) the local police are advised, in writing, of the nature of the dangerous goods no more than 12 months in advance of the transport.

1.29 *Repealed*

1.30 Ferry Exemption

Transport on ferry

Paragraph 3.6(3)(a) of Part 3 (Documentation) and subsection 4.16(3) and paragraph 4.16.1(2)(d) of Part 4 (Dangerous Goods Safety Marks) do not apply to dangerous goods in transport on a road vehicle or railway vehicle that is being transported on board a vessel that is operating over the most direct water route between two points that are not more than 5 km apart.

1.30.1 Propane and Gasoline in Highway Tanks on Board Passenger Carrying Vessels

Propane and gasoline on passenger carrying vessels

Subsection 1.6(1) of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and paragraph 3.6(3)(a) of Part 3 (Documentation) do not apply to dangerous goods that are UN1203, GASOLINE or UN1978, PROPANE that are in a highway tank that is being transported by a tank truck on board a passenger carrying vessel that is operating over the most direct water route between two points that are not more than 5 km apart if the following conditions are met:

(a) no more than two tank trucks transporting dangerous goods that are UN1203, GASOLINE or UN1978, PROPANE are on board the passenger carrying vessel;

(b) before the tank truck is placed on board the passenger carrying vessel, the highway tank is visually inspected by its driver for dents or evidence of leakage;

(c) the tank truck is located on an open deck;

(d) a safety perimeter of at least 1 m is established around the tank truck while it is on board the passenger carrying vessel;

(e) the tank truck's parking brakes are set securely throughout the journey until the passenger carrying vessel has completed docking;

(f) the tank truck's engine is either left running at all times or is shut off and not restarted until the passenger carrying vessel has completed docking;

(g) the tank truck's driver remains with the tank truck while it is on board the passenger carrying vessel;

(h) notices prohibiting smoking, the use of an open flame and the use of spark-producing equipment on the passenger carrying vessel are placed in full view of passengers;

(i) fixed extinguishing equipment, including foam cannon units that are capable of reaching the highway tank, is installed on board the passenger carrying vessel;

(j) absorbent material that is compatible with flammable liquids is available on board the passenger carrying vessel;

(k) a flammable gas detector is available on board the passenger carrying vessel; and

(l) the passenger carrying vessel's master ensures that the tank truck is constantly monitored by a crew member while it is on board the passenger carrying vessel.

1.31 Class 1, Explosives Exemption

Explosives

Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 6 (Training), Part 9 (Road) and Part 10 (Rail) do not apply to the handling, offering for transport or transporting on a road vehicle or a railway vehicle dangerous goods included in Class 1, Explosives, if

- maximum net explosives quantity

(a) the quantity of all the explosives in the road vehicle or railway vehicle that are not subject to special provision 85 or 86, expressed in net explosives quantity, is less than or equal to the number shown in column 6(a) of Schedule 1 for each of the explosives;

For the purpose of this explanation, suppose the explosives have net explosives quantities NEQ1, NEQ2, NEQ3, etc. and have UN numbers NUM1, NUM2, NUM3, etc. The requirements of this section are met if the total net explosives quantity of all the explosives taken together (NEQ1 + NEQ2 + NEQ3 + etc.) is less than or equal to the number in column 6(a) of Schedule 1 for NUM1, and is also less than or equal to the number in column 6(a) of Schedule 1 for NUM2 and is also less than or equal to the number in column 6(a) of Schedule 1 for NUM3, etc.

- maximum number of articles

(b) the quantity of all the explosives in the road vehicle or railway vehicle that are subject to special provision 85 or 86, expressed in number of articles, is less than or equal to the number shown in special provision 85 or 86 for each of the explosives;

For the purpose of this explanation, suppose the explosives have number of articles NB1, NB2, NB3, etc. and have UN numbers NUM1, NUM2, NUM3, etc. This section is satisfied if the total number of articles of all the explosives taken together (NB1 + NB2 + NB3 + etc.) is less than or equal to the number shown in special provision 85 or 86 for NUM1, and is also less than or equal to the number shown in special provision 85 or 86 for NUM2, and is also less than or equal to the number shown in the special provision for NUM3, etc.

- safety marks

(c) each means of containment has displayed on it the class, compatibility group and UN number of the explosives contained inside it; and

- placard

(d) a placard is displayed in accordance with Part 4, Dangerous Goods Safety Marks, if the explosives are included in Class 1.1, 1.2, 1.3 or 1.5

(i) in any quantity exceeding 10 kg net explosives quantity, or

(ii) in any number of articles exceeding 1,000 for explosives subject to special provision 85 or 86.

1.32 Class 2, Gases, or Ammonia Solutions (Class 8) in Refrigerating Machines Exemption

Refrigerant gases

Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan), Part 8 (Reporting Requirements), Part 9 (Road) and Part 10 (Rail) do not apply to UN2857, REFRIGERATING MACHINES, and refrigerating machine components, containing Class 2.2, Non-flammable, Non-toxic gases or UN2672, AMMONIA SOLUTIONS, if the quantity of gas has a mass that is less than or equal to 12 kg and the quantity of ammonia solutions is less than or equal to 12 L.

Refrigerating machines include air conditioning units and machines or other appliances designed for the specific purpose of keeping food or other items at a low temperature in an internal compartment.

1.32.1 Class 2, Gases, that may be Identified as UN1075, LIQUEFIED PETROLEUM GAS

LPG, UN 1075

(1) The following dangerous goods may be identified by the UN number UN1075 and the shipping name LIQUEFIED PETROLEUM GASES instead of the UN number and shipping name identified for them:

- **(a)** UN1011, BUTANE;
- **(b)** UN1012, BUTYLENE;
- **(c)** UN1055, ISOBUTYLENE;
- **(d)** UN1077, PROPYLENE;
- **(e)** UN1969, ISOBUTANE; and
- **(f)** UN1978, PROPANE.

(2) The shipping name of the dangerous goods listed in paragraphs (1)(a) to (f) may be shown on the shipping document, in parentheses, following the words LIQUEFIED PETROLEUM GASES.

(3) If either UN1077, PROPYLENE or UN1978, PROPANE, is to be transported on a road vehicle or railway vehicle on board a vessel and is identified as LIQUEFIED PETROLEUM GASES on the shipping document in accordance with subsection (1), the shipping name PROPYLENE or PROPANE, as appropriate, must be shown on the shipping document, in parentheses, following the words LIQUEFIED PETROLEUM GASES.

1.32.2 Class 2, Gases, Absolute Pressure between 101.3 kPa and 280 kPa

Class 2.2 gases at low pressure

Gases that are at an absolute pressure between 101.3 kPa and 280 kPa at 20°C, other than gases included in Class 2.1 or Class 2.3, may be handled, offered for transport or transported on a road vehicle, a railway vehicle or a vessel on a domestic voyage as Class 2.2, Non-flammable, Non-toxic gas. In that case, the requirements of these Regulations that relate to gases included in Class 2.2 must be complied with.

1.32.3 Class 2, Gases, in Small Means of Containment Exemption

Gases in cylinders ("welder's exemption")

Part 3, Documentation, and Part 6, Training, do not apply to dangerous goods that are transported in one or more small means of containment on a road vehicle solely on land if

(a) the dangerous goods are

(i) UN1001, ACETYLENE, DISSOLVED,

(ii) UN1002, AIR, COMPRESSED,

(iii) UN1006, ARGON, COMPRESSED,

(iv) UN1013, CARBON DIOXIDE,

(v) UN1060, METHYLACETYLENE AND PROPADIENE MIXTURE, STABILIZED,

(vi) UN1066, NITROGEN, COMPRESSED,

(vii) UN1072, OXYGEN, COMPRESSED, or

(viii) UN1978, PROPANE;

(b) the dangerous goods are contained in no more than five small means of containment;

(c) the gross mass of the dangerous goods is less than or equal to 500 kg; and

(d) the labels displayed on the small means of containment can be seen from outside the road vehicle.

1.33 Class 3, Flammable Liquids: General Exemption

Flammable liquids exemption

Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan), Part 9 (Road) and Part 10 (Rail) do not apply to the handling, offering for transport or transporting of dangerous goods included in Class 3, Flammable Liquids, on a road vehicle, a railway vehicle or a vessel on a domestic voyage if the dangerous goods

(a) have no subsidiary class; *- no subsidiary class*

(b) are included in Packing Group III and have a flash point greater than 37.8°C; and *- Packing Group III*

(c) are in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety. *- small means of containment*

1.34 Class 3, Flammable Liquids, Flash Point Greater Than 60°C but Less Than or Equal to 93°C

Flash point between 60°C and 93°C

Despite section 6.1 of the Act and section 4.2 of Part 4 (Dangerous Goods Safety Marks) of these Regulations, substances that have a flash point greater than 60°C but less than or equal to 93°C may be transported on a road vehicle, on a railway vehicle or on a vessel on a domestic voyage as Class 3, Flammable Liquids, Packing Group III. In that case, the requirements of these Regulations, except paragraph 7.2(1)(f) of Part 7 (Emergency Response Assistance Plan), that relate to flammable liquids that have a flash point less than or equal to 60°C must be complied with.

1.34.1 *Repealed*

1.35 UN1202, DIESEL FUEL, or UN1203, GASOLINE, Exemption

Diesel and gasoline exemption

Part 3 (Documentation), the UN number requirements in section 4.12 and 4.15.2 of Part 4 (Dangerous Goods Safety Marks), and Part 6 (Training) do not apply to the offering for transport, handling or transporting on a road vehicle of dangerous goods that are UN1202, DIESEL FUEL or UN1203, GASOLINE, if

(a) the dangerous goods are in one or more means of containment, each of which is visible from outside the road vehicle and each of which has displayed on it

(i) the label or placard required for the dangerous goods by Part 4, Dangerous Goods Safety Marks, or

(ii) if a side or end of the means of containment is not visible from outside the road vehicle, the label or placard required for the dangerous goods by Part 4, Dangerous Goods Safety Marks, on a side or end that is visible from outside the road vehicle;

(b) each means of containment is secured to the road vehicle so that the required label or at least one of the required placards displayed on it is visible from outside the road vehicle during transport; and

(c) the total capacity of all the means of containment is less than or equal to 2,000 L.

1.36 Class 3, Flammable Liquids, Alcoholic Beverage and Aqueous Solution of Alcohol Exemption

Alcoholic beverages and solutions

Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan), Part 8 (Reporting Requirements), Part 9 (Road) and Part 10 (Rail) do not apply to the handling, offering for transport or transporting on a road vehicle, a railway vehicle or a vessel on a domestic voyage of

(a) an alcoholic beverage if the alcoholic beverage

(i) contains alcohol that is less than or equal to 24 per cent by volume,

(ii) is included in Packing Group II and is in a means of containment with a capacity that is less than or equal to 5 L, or

(iii) is included in Packing Group III and is in a means of containment with a capacity that is less than or equal to 250 L; or

(b) an aqueous solution of alcohol if the aqueous solution has a flash point greater than 23°C and

(i) contains alcohol that is less than or equal to 50 per cent by volume and at least 50 per cent by volume of a substance that is not dangerous goods, and

(ii) is contained in a small means of containment.

1.37 *Repealed*

1.38 Polyester Resin Kit Exemption

Polyester resin kit

Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan), Part 8 (Reporting Requirements), Part 9 (Road) and Part 10 (Rail) do not apply to the handling, offering for transport or transporting of a polyester resin kit that consists of a substance included in Class 3, Packing Group II or III and a substance included in Class 5.2, Type D, E or F that does not require temperature control if

(a) the kit is in transport on a road vehicle, a railway vehicle or a vessel on a domestic voyage;

(b) the gross mass of the kit is less than or equal to 30 kg;

(c) the quantity of Class 3 substance in the kit is less than or equal to

(i) 1 L for Packing Group II substances, and

(ii) 5 L for Packing Group III substances; and

(d) the quantity of Class 5.2 substance in the kit is less than or equal to

(i) 125 mL for liquids, and

(ii) 500 g for solids.

1.39 Class 6.2, Infectious Substances, UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B Exemption

Infectious substances, category B

Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, except section 4.22.1, do not apply to the handling, offering for transport or transporting of infectious substances that are included in Category B if

(a) one external surface of the means of containment for the substances measures at least 100 mm × 100 mm;

(b) the means of containment is in compliance with Part 5, Means of Containment, and has displayed on the external surface

(i) the mark illustrated in Part 4, Dangerous Goods Safety Marks, for infectious substances included in Category B, and

(ii) the shipping name, on a contrasting background, next to the mark in letters at least 6 mm high; and

(c) the 24-hour telephone number required under paragraph 3.5(1)(f) is displayed next to the shipping name on the means of containment.

1.40 *Repealed*

1.41 Biological Products Exemption

Biological products

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 to the handling, offering for transport or transporting of biological products if they

(a) are prepared in accordance with the requirements set out under the "Food and Drugs Act";

(b) are in a means of containment that is 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; and

(c) are in a means of containment that is marked with the words "Biological Product" or "Produit biologique" in black letters at least 6 mm high on a contrasting background.

1.42 Human or Animal Specimens Believed Not to Contain Infectious Substances Exemption

Specimens believed not to be infectious

(1) 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 to the handling, offering for transport or transporting of human or animal specimens that a person has no reason to believe contain infectious substances.

Professional judgment is required to determine if a specimen is exempt under this section. Factors such as the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions should be considered. Examples of specimens that may be transported under this section include

- *blood or urine specimens to monitor cholesterol levels, blood glucose levels, hormone levels, prostate-specific antigens (PSA) or organ function;*
- *specimens to determine the presence of drugs or alcohol for insurance or employment purposes;*
- *pregnancy tests;*
- *biopsies to detect cancer; and*
- *specimens for antibody detection in humans or animals.*

(2) The human or animal specimens referred to in subsection (1) must be in a means of containment that is marked with the words "Exempt Human Specimen" or "spécimen humain exempté" or "Exempt Animal Specimen" or "spécimen animal exempté" and that is designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of the specimen.

1.42.1 Tissues or Organs for Transplant Exemption

Transplant tissues and organs

These Regulations do not apply to the handling, offering for transport or transporting of tissues or organs for transplant.

1.42.2 Blood or Blood Components Exemption

Blood or blood components

(1) 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 to the handling, offering for transport or transporting of blood or blood components that are intended for transfusion or for the preparation of blood products and are reasonably believed not to contain infectious substances.

(2) The blood or blood components referred to in subsection (1) must be in a means of containment that is designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of the blood or blood components.

1.42.3 Medical or Clinical Waste

Medical or clinical waste

This exemption does not apply to medical waste containing infectious substances included in Category A.

Part 3 (Documentation), sections 4.10 to 4.12 of 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 to the offering for transport, handling, or transporting of dangerous goods that are medical waste or clinical waste if

(a) the dangerous goods are UN3291, (BIO) MEDICAL WASTE, N.O.S.;

(b) the dangerous goods are in a means of containment that is in compliance with CGSB-43.125; and

(c) the following information is displayed on the means of containment:

(i) the biohazard symbol; and

(ii) the word "BIOHAZARD" or "BIORISQUE".

1.43 Class 7, Radioactive Materials Exemption

Radioactive materials, excepted packages

Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan), Part 9 (Road), Part 10 (Rail), Part 11 (Marine) and Part 12 (Air) do not apply to the handling, offering for transport or transporting of Class 7, Radioactive Materials, if the radioactive materials

(a) satisfy the conditions in the "Packaging and Transport of Nuclear Substances Regulations" to be transported in an excepted package;

(b) are in an excepted package; and

(c) are accompanied by a document that includes the shipping name and UN number of the radioactive materials.

1.44 Residue of Dangerous Goods in a Drum Exemption

Residues in a drum

Part 2 (Classification), Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks) and Part 7 (Emergency Response Assistance Plan) do not apply to a residue of dangerous goods contained in a drum that is in transport on a road vehicle, a railway vehicle or a vessel on a domestic voyage, except for dangerous goods included in Packing Group I or contained in a drum otherwise requiring a label for Class 1, 4.3, 6.2 or 7, if

(a) *Repealed*

(b) the drum is being transported for the purpose of reconditioning or reuse in accordance with section 5.12 of Part 5, Means of Containment;

(c) when more than 10 drums are on the road vehicle or on the railway vehicle, the road vehicle or railway vehicle has displayed on it the DANGER placard in accordance with Part 4, Dangerous Goods Safety Marks; and

(d) the drums are accompanied by a document that includes the following information:

(i) the primary class of each residue and the words "Residue Drum(s)" or "fût(s) de résidu" when the primary class can be reasonably determined, preceded by the number of drums containing dangerous goods with that primary class, and

(ii) the words "Residue Drum(s) – Content(s) Unknown" or "fût(s) de résidu – contenu inconnu" if there are any residues for which the primary class cannot be reasonably determined, preceded by the number of drums containing the residues.

1.45 Fumigation of Means of Containment

Fumigants

These Regulations, except for subsection 3.5(3) of Part 3, Documentation, and section 4.21 of Part 4, Dangerous Goods Safety Marks, do not apply to a means of containment, or the contents of a means of containment, that is being fumigated with dangerous goods and that is in transport if the fumigant is the only dangerous goods in transport in the means of containment.

1.45.1 Marine Pollutants Exemption

Marine pollutants

Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, do not apply to substances that are classified as marine pollutants in accordance with section 2.43 of Part 2, Classification, if they are in transport solely on land by road vehicle or railway vehicle. However, substances may be identified as marine pollutants on a shipping document and the required dangerous goods safety marks may be displayed when they are in transport by road or railway vehicle.

1.46 Miscellaneous Special Cases

Exemptions for certain dangerous goods

These Regulations do not apply to the following dangerous goods:

(a) ammoniating fertilizer solutions with an absolute pressure of ammonia less than or equal to 276 kPa at 41°C;

(b) antimony oxides and antimony sulphides with 0.5 per cent or less arsenic by mass;

(c) charcoal or carbons that are

- **(i)** non-activated carbon blacks of mineral origin,
- **(ii)** carbons made by a steam activation process, or
- **(iii)** activated or non-activated carbons that pass the self-heating test for carbon in section 33.3.1.3.3 of the Manual of Tests and Criteria;

(d) cinnabar;

(e) cyclohexanone peroxides with 70 per cent or more inert inorganic solid, by mass;

(f) Di-4-chlorobenzoyl peroxide or p-chlorobenzoyl peroxide with 70 per cent or more inert inorganic solid, by mass;

(g) 1,3-Di-(2-tert-butylperoxyisopropyl) benzene or 1,4-Di-(2-tert-butylperoxyisopropyl) benzene, or mixtures of both, 60 per cent or more, by mass, of which consists of an inert solid, if the substance is in a means of containment in a total quantity less than or equal to 200 kg;

(h) dibenzoyl peroxide or benzoyl peroxide that is in a concentration less than 35.5 per cent, by mass, with finely ground starch, calcium sulphate dihydrate or dicalcium phosphate dihydrate, or that is in a concentration less than 30 per cent, by mass, with 70 per cent or more, by mass, inert solid;

(i) dicumyl peroxide with 60 per cent or more inert inorganic solid, by mass;

(j) ferricyanides and ferrocyanides;

(k) fish-meal that is acidified and is wetted with 40 per cent or more water, by mass;

(l) *Repealed*

(m) *Repealed*

(n) sodium dichloroisocyanurate dihydrate;

(o) solvent extracted soya bean meal free of flammable solvent and containing 1.5 per cent or less oil, by mass, and 11 per cent or less moisture, by mass; or

(p) wood or wood products treated with wood preservatives.

1.47 UN1044, FIRE EXTINGUISHERS, Exemption

Fire extinguishers

Subsections 5.10(1) and (2) of Part 5 (Means of Containment) do not apply to the handling, offering for transport or transporting of UN1044, FIRE EXTINGUISHERS, if the fire extinguishers

(a) do not contain dangerous goods included in Class 2.3, Class 6.1 or Class 8;

(b) are contained in an outer means of containment;

(c) have a capacity less than 18 L or, if they contain liquefied gas, a capacity less than 0.6 L;

(d) have an internal pressure less than or equal to 1,650 kPa at 21°C; and

(e) are manufactured, tested, maintained, marked and used in accordance with ULC Standard S504, ULC Standard S507, ULC Standard S512 or ULC Standard S554.

1.48 Air Ambulance Exemption

Air ambulances

These Regulations, except for Part 8 (Reporting Requirements), do not apply to dangerous goods required for patient care on an aircraft if

(a) the aircraft is configured as an air ambulance and is used only as an air ambulance;

(b) the transport of the dangerous goods is not forbidden in Schedule 1, Schedule 3 or the ICAO Technical Instructions;

(c) the dangerous goods are under the control of a health care professional or a person who is trained in accordance with Part 6, Training;

(d) in the case of

(i) dangerous goods included in Class 2, Gases, they are in one or more small means of containment in compliance with the requirements for transporting gases in Part 5, Means of Containment, or

(ii) dangerous goods not included in Class 2, Gases, they are in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety; and

(e) the means of containment are secured to prevent unintended movement during transport.

1.49 Cylinder Exemption

Cylinders

(1) Subsection 5.1(1) and Section 5.10 of Part 5 (Means of Containment) do not apply to the handling, offering for transport or transporting of dangerous goods in a cylinder on a road vehicle or an aircraft if

(a) the cylinder is from or for a vessel or an aircraft;

(b) the cylinder is transported solely for the purpose of refilling, exchanging or requalification;

(c) the cylinder is accompanied by a shipping document that includes the words "Cylinder in transport for purpose of refilling, exchanging or requalification in compliance with section 1.49 of the TDGR" or "Bouteille à gaz en transport aux fins de remplissage, d'échange ou de requalification en conformité avec l'article 1.49 du RTMD";

(d) the cylinder is closed and secured so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety;

(e) in the case of a cylinder from or for a vessel that is a Canadian vessel as defined in section 2 of the "Canada Shipping Act, 2001", the cylinder conforms, as applicable, to

(i) the "Fire Detection and Extinguishing Equipment Regulations",

(ii) the "Life Saving Equipment Regulations",

(iii) the "Large Fishing Vessel Inspection Regulations",

(iv) the "Small Fishing Vessel Inspection Regulations", and

(v) the "Small Vessel Regulations";

(f) in the case of a cylinder from or for a vessel that is a foreign vessel as defined in section 2 of the "Canada Shipping Act, 2001" and that is a Safety Convention vessel as defined in that section, the cylinder is used for a purpose related to the operation or navigation of the vessel, including a life-saving or emergency purpose; and

(g) in the case of a cylinder from or for an aircraft, a flight authority, as defined in subsection 101.01(1) of the "Canadian Aviation Regulations", has been issued in respect of the aircraft and the cylinder serves an aeronautical purpose, including a life-saving or emergency purpose.

(2) When the cylinder has been requalified or filled, the exemption set out in subsection (1) applies only if the cylinder was requalified in accordance with clause 6.5.1(b) of CSA B340 and filled in compliance with clause 6.5.1(c) of CSA B340.

1.50 Hot Air Balloon Cylinder Exemption

Hot air balloons

(1) Sections 5.1, 5.2 and 5.5 and subsections 5.10(1) and (2) of Part 5 (Means of Containment) do not apply to the offering for transport, handling or transporting of UN1978, PROPANE, in a cylinder on a road vehicle, a railway vehicle or a ship on a domestic voyage if

(a) the cylinder is for use in a hot air balloon and is marked clearly and visibly, in letters at least 5 mm high, with the words "FOR USE IN HOT AIR BALLOONS ONLY" or "POUR UTILISATION DANS LES BALLONS SEULEMENT";

(b) a flight authority, as defined in subsection 101.01(1) of the "Canadian Aviation Regulations", has been issued in respect of the hot air balloon;

(c) the cylinder is designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of dangerous goods that could endanger public safety;

(d) subject to paragraph (e), the cylinder

(i) is manufactured, selected and used in accordance with CSA B340, except clause 5.3.1.4 of that standard,

(ii) is manufactured, selected and used in accordance with CSA B342,

(iii) is manufactured, selected and used in accordance with 49 CFR and, in the case of a requalified cylinder, is marked with the requalification markings required by CSA B339 or 49 CFR,

(iv) is manufactured and selected in accordance with the ADR, is marked with the symbol π (Pi) in accordance with the TPED and is used in accordance with clauses 4.1.1.2, 4.1.3, 4.1.4, 4.2, 4.3.1, 4.3.2, 4.3.7, 4.3.8, 4.3.9, 5.1.1, 5.1.2, 5.1.3(b) to (e), 5.1.8 and 5.3.1.1 of CSA B340, or

(v) was manufactured before January 1, 2017, and is used in accordance with clauses 4.1.1.2, 4.1.3, 4.1.4, 4.2, 4.3.1, 4.3.2, 4.3.7, 4.3.8, 4.3.9, 5.1.1, 5.1.2, 5.1.3(b) to (e), 5.1.8 and 5.3.1.1 of CSA B340; and

(e) the liquid phase of the propane is less than or equal to 85% of the capacity of the cylinder at 15°C.

(2) For the purposes of subparagraph (1)(d)(iv), "ADR" means the "European Agreement concerning the International Carriage of Dangerous Goods by Road", published by the United Nations, as amended from time to time and "TPED" means the "Transportable Pressure Equipment Directive", Directive 2010/35/EU, June 16, 2010, published by the Council of the European Union.

(3) Subject to subsection (4), a cylinder referred to in subparagraph (1)(d)(iv) or (v) must be requalified within

(a) 10 years after its date of manufacture; or

(b) 10 years after its most recent requalification date as marked on the cylinder.

(4) A cylinder that must be requalified on or before January 1, 2018 may be requalified within a 12-month grace period that starts on the day on which this section comes into force.

(5) When it is requalified, a cylinder referred to in subparagraph (1)(d)(iv) or (v) must

(a) be requalified with a proof pressure retest and an internal and external visual inspection in accordance with clause 24 of CSA B339 by a facility that holds a valid certificate of registration referred to in clause 25.3 of CSA B339; or

(b) be subjected to a periodic inspection and test in accordance with clause 19 of CSA B341.

Notes

Appendix 3

Guide to Category A and Category B Assignment

Infectious substances are divided into two categories: Category A and Category B. This Appendix is a list of infectious substances by category. Category A is identified by two UN numbers and shipping names, UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS and UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS. Category B is identified by one UN number and shipping name, UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B.

The lists in this Appendix are not exhaustive or complete and are provided for guidance to those who must classify infectious substances. If there is any doubt as to whether a substance is infectious or as to the category to which it must be assigned, assistance may be obtained from the Director, Office of Laboratory Security, Public Health Agency of Canada, or from the Director, Biohazard Containment and Safety, Canadian Food Inspection Agency.

An infectious substance is defined in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases, as "a substance known or reasonably believed to contain viable micro-organisms such as bacteria, viruses, rickettsia, parasites, fungi and other agents such as prions that are known or reasonably believed to cause disease in humans or animals and that are listed in Appendix 3 to Part 2, Classification, or that exhibit characteristics similar to a substance listed in Appendix 3".

***If the symbol "@" appears** beside an infectious substance listed in this Appendix, that infectious substance affects animals only. The UN number and shipping name are UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS or UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B.*

***If there is no symbol "@",** the infectious substance affects humans or animals. The UN number and shipping name is UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS or UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B.*

The item column gives sequential item numbers for the entries in this Appendix. Beside the item number in parentheses is the corresponding item number in the French-language Appendix.

***Substances with an asterisk "*"** against them in column 3 of the Category A list require an ERAP in accordance with subsection 7.1(7) of Part 7, Emergency Response Assistance Plan.*

UN 2814, Category A – Virus and Bacteria

VIRUS

Item *(French)*	*Column 1* Family	*Column 2* Genus	*Column 3* Species
1 *(1)*	Arenaviridae	Arenavirus	(a) Flexal virus (b) Guanarito virus* (c) Junin virus* (d) Lassa virus* (e) Machupo virus* (f) Sabia virus*
2 *(2)*	Bunyaviridae	(1) Hantavirus	(a) Hantaviruses causing hemorrhagic fever with renal syndrome (b) Hantaviruses causing pulmonary syndrome
		(2) Nairovirus	Crimean-Congo hemorrhagic fever virus*
		(3) Phlebovirus	Rift Valley Fever virus
3 *(3)*	Coronaviridae	Coronavirus	Human Coronavirus – SARS, Severe Acute Respiratory Syndrome
4 *(4)*	Filoviridae	Filovirus	(a) Ebola virus* (b) Marburg virus*
5 *(5)*	Flaviviridae	Flavivirus	(a) Dengue virus (b) Japanese encephalitis virus (c) Kyasanur Forest virus* (d) Omsk hemorrhagic fever virus* (e) Russian spring-summer encephalitis virus* (f) Tick-borne encephalitis virus (g) West Nile fever virus (h) Yellow fever virus (wild type)
6 *(6)*	Hepadnaviridae	Orthohepadnavirus	Hepatitis B virus
7 *(7)*	Herpesviridae (Alphaherpesvirinae)	Simplexvirus	Herpes B virus* (Cercopithecine Herpesvirus-1): (a) Herpesvirus simiae (b) Monkey B virus
8 *(8)*	Orthomyxoviridae	Influenzavirus A, B and C	Highly pathogenic avian influenza virus
9 *(9)*	Paramyxoviridae	Henipa virus (formerly: Morbillivirus)	(a) Hendra virus* (b) Nipah virus* (Hendra-like virus)
10 *(10)*	Picornaviridae	Enterovirus	Polioviruses
11 *(11)*	Poxviridae	Orthopoxvirus	(a) Monkeypox virus (b) Variola* (smallpox virus)
12 *(12)*	Retroviridae	Lentivirus	Human Immunodeficiency virus
13 *(13)*	Rhabdoviridae	Lyssavirus	Rabies virus
14 *(14)*	Togaviridae	Alphavirus	(a) Eastern equine encephalitis virus (b) Venezuelan equine encephalitis virus

PART 3
Documentation

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PART 3
Documentation

Background

The underlying principle of this Part is that dangerous goods in transport must be accompanied by physical documentation that provides basic information about them.

The documentation is prepared by the consignor before the carrier takes possession of the dangerous goods (that is, before the dangerous goods are in transport). The documentation must be kept in specific locations while the dangerous goods are in transport.

When information required by this Part is recorded on paper, that paper is a shipping document.

A shipping document may be in any form, including a waste manifest or a company-designed form, as long as it contains all the information required by this Part.

When information required by this Part is recorded electronically, the resulting document is an electronic copy of a shipping document.

A shipping document and an electronic copy of it are both shipping records.

When documentation is required to be kept, it may be in the form of a shipping record, that is, on paper or in electronic form.

The term "master" is used in this Part and is not defined in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases but is defined in the "Canada Shipping Act".

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:

aircraft
CANUTEC
carrier
49 CFR
class
classification
compatibility group
consignor
dangerous goods
dangerous goods safety mark
ERAP
flash point
gas
handling
ICAO Technical Instructions
IMDG Code
import
infectious substance
inspector
in transport
liquid
means of containment
means of transport
net explosives quantity
offer for transport
packing group
person
primary class
railway vehicle
road vehicle
shipping document
shipping name
shipping record
small means of containment
solid
special provision
subsidiary class
substance
technical name
train
UN number
UN Recommendations
vessel

3.1 Consignor Responsibilities

A person may be both a consignor and a carrier of the same consignment, for example, a manufacturer who also transports the dangerous goods he or she produces.

Consignor prepares shipping document

(1) Before allowing a carrier to take possession of dangerous goods for transport, the consignor must prepare and give to that carrier a shipping document or, if the carrier agrees, an electronic copy of the shipping document.

Importing dangerous goods

(2) When dangerous goods are imported into Canada, the consignor must, before the dangerous goods are transported in Canada, ensure that the carrier has a shipping document or, with the agreement of the carrier, an electronic copy of the shipping document that contains the information required by these Regulations.

3.2 Carrier Responsibilities

According to the definitions of "carrier" and "in transport", a person such as a freight forwarder who has possession of dangerous goods while they are in transport is a carrier for the purposes of these Regulations.

Carrier must have shipping document

(1) A carrier must not take possession of dangerous goods for transport unless the carrier has the shipping document for the dangerous goods.

Electronic copy of shipping document

(2) A carrier who accepts an electronic copy of a shipping document must produce a shipping document from the electronic copy before taking possession of the dangerous goods for transport.

In possession of carrier

(3) Dangerous goods in transport are in the possession of a carrier from the time the carrier takes possession of them for transport until another person takes possession of them.

Location of shipping document

(4) While the dangerous goods are in transport and in the possession of a carrier, the carrier must keep the shipping document in the location specified by sections 3.7 to 3.10.

Giving shipping document to another carrier

(5) At or before the time another carrier takes possession of the dangerous goods, the carrier must give the shipping document or a copy of the shipping document to that other carrier or, with that other carrier's agreement, an electronic copy of it.

Giving document to another person

(6) At or before the time a person, other than another carrier, takes possession of the dangerous goods, the carrier of the dangerous goods must give to that person a document that identifies the dangerous goods or, with that person's agreement, an electronic copy of a document that identifies the dangerous goods.

Replacing shipping document

(7) A carrier may replace a shipping document provided by the consignor with a new shipping document or with a copy of the shipping document in a different format.

3.3 Consist for Transport by Rail

Rail consist

(1) When a train includes a railway vehicle containing dangerous goods for which a placard is required to be displayed in accordance with Part 4, Dangerous Goods Safety Marks, the person in charge of the train must prepare and give a consist to a member of the train crew. The information on the consist must be kept up to date by the train crew and kept with the shipping document.

(2) The consist must include, for each railway vehicle containing dangerous goods for which a placard is required to be displayed in accordance with Part 4, Dangerous Goods Safety Marks,

- location of dangerous goods

(a) the numerical location of the railway vehicle in the train, numbering the first vehicle at the head of the train as 1, the next vehicle as 2 and so on, excluding the locomotive or locomotives wherever they are located in the train;

- reporting mark

(b) the reporting mark of the railway vehicle;

- tank car

(c) for a tank car, the shipping name or UN number of the dangerous goods in the tank car; and

- other railway vehicles

(d) for a railway vehicle other than a tank car,

(i) the shipping name or UN number of the dangerous goods, if the railway vehicle contains only dangerous goods with the same shipping name and UN number, or

(ii) the words “Dangerous Goods” or “Marchandises dangereuses”, if the railway vehicle contains dangerous goods that have different shipping names or UN numbers.

- copy for CANUTEC

(3) A carrier must be able to immediately provide to CANUTEC a copy of a consist whenever the train to which the consist applies is in operation or is involved in an accident.

3.4 Legibility and Language

Clear and legible

(1) 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.

Dangerous goods with non-dangerous goods

(2) When the information related to dangerous goods is on the same shipping document with information related to non-dangerous goods, the dangerous goods information must be shown

(a) before the information related to the non-dangerous goods and under the heading “Dangerous Goods” or “Marchandises dangereuses”;

(b) printed or highlighted in a colour that contrasts with the print or highlight used for the information related to the non-dangerous goods; or

(c) following the letter “X” opposite the shipping name in a column under the heading “DG” or “MD”.

3.5 Information on a Shipping Document

Information on shipping document:

(1) The following information must be included on a shipping document:

- *consignor's name and address*

(a) the name and address of the place of business in Canada of the consignor;

- *date*

(b) the date the shipping document or an electronic copy of it was prepared or was first given to a carrier;

- *description*

(c) the description of each of the dangerous goods, in the following order:

(i) the UN number,

(ii) the shipping name and, immediately after the shipping name unless it is already part of it,

(A) for dangerous goods that are subject to special provision 16, the technical name, in parentheses, of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods, and

(B) for a liquefied petroleum gas that has not been odorized, the words "Not Odourized" or "Not Odorized" or "Sans odorisant",

(iii) the primary class, which may be shown as a number only or under the heading "Class" or "Classe" or following the word "Class" or "Classe",

(iv) for dangerous goods with a primary class of Class 1, Explosives, the compatibility group letter following the primary class,

(v) the subsidiary class or classes, in parentheses, which may be shown as a number only or under the heading "subsidiary class" or "classe subsidiaire" or following the words "subsidiary class" or "classe subsidiaire", except that, for transport by aircraft or by vessel, the subsidiary class or classes may be shown after the information required by this paragraph,

(vi) the packing group roman numeral, which may be shown under the heading "PG" or "GE" or following the letters "PG" or "GE" or following the words "Packing Group" or "Groupe d'emballage", and

(vii) for dangerous goods that are subject to special provision 23, the words "toxic by inhalation" or "toxic – inhalation hazard" or "toxique par inhalation" or "toxicité par inhalation";

Examples of descriptions of dangerous goods are:

UN1203, GASOLINE, 3, II

UN1203, GASOLINE, Class 3, PG II

UN1214, ISOBUTYLAMINE, Class 3, Subsidiary Class (8), II

UN1214, ISOBUTYLAMINE, Class 3(8), Packing Group II

- *quantity of dangerous goods*

(d) for each shipping name, the quantity of dangerous goods and the unit of measure used to express the quantity which, on a shipping document prepared in Canada, must be a unit of measure included in the International System of Units (SI) or a unit of measure acceptable for use under the SI system, except that for dangerous goods included in Class 1, Explosives, the quantity must be expressed in net explosives quantity or, for explosives with UN numbers subject to special provision 85 or 86, in number of articles or net explosives quantity;

Examples of descriptions of units of measure include "net mass, 30 kg", "gross mass, 200 kg" or "number of objects, 1,000" or, for a gas, the volume of the means of containment in direct contact with the gas, such as "50 L". Note that solids are normally measured in kilograms while volumes, including liquid capacities, are normally measured in litres. Using litres for this purpose is acceptable under the SI system.

3.5 Information on a Shipping Document *continued*

(e) for dangerous goods in one or more small means of containment that require a label to be displayed on them in accordance with Part 4, Dangerous Goods Safety Marks, the number of small means of containment for each shipping name; and

- number of small containers

(f) the words "24-Hour Number" or "Numéro 24 heures", or an abbreviation of these words, followed by a telephone number, including the area code, at which the consignor can be reached immediately for technical information about the dangerous goods in transport, without breaking the telephone connection made by the caller.

- 24-hour number

The terms "24-Hour Number" and "Numéro 24 heures" used in this paragraph refer to the telephone number that must be available when the dangerous goods are in transport. The terms were chosen to emphasize that the requirement is applicable not only during office hours but must also be satisfied at any hour of the day when the dangerous goods are in transport.

An example of the type of technical information referred to in paragraph (1)(f) is the information contained in ANSI Standard Z400.1-1998, Material Safety Data Sheet.

(2) The telephone number of a person who is not the consignor, such as CANUTEC, but who is competent to give the technical information required by paragraph (1)(f) in English or in French may be used. However, to use CANUTEC's telephone 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.

CANUTEC telephone number

(3) A means of containment, or the contents of a means of containment, that is being fumigated with dangerous goods and that is in transport must be accompanied by a shipping document that, despite subsections (1) and (5) and section 3.6, includes the following information if the fumigant is the only dangerous goods in transport in the means of containment:

Fumigated unit

(a) the shipping name, "FUMIGATED UNIT" or "ENGIN SOUS FUMIGATION";

(b) the class, Class 9;

(c) the UN number, UN3359;

(d) the quantity of the fumigant;

(e) the date of fumigation; and

(f) instructions for the disposal of residues of the fumigant or fumigation device.

(4) Despite paragraph (1)(d), if the means of containment contains a residue, the words "Residue — Last Contained" or "Résidu — dernier contenu" may be added before or after the description of the dangerous goods. These words must not, however, be used for dangerous goods included in Class 2, Gases, that are in a small means of containment or for dangerous goods included in Class 7, Radioactive Materials.

"Residue – Last Contained"

Changes during transport

(5) If the quantity of dangerous goods required on a shipping document under paragraph (1)(d) or the number of small means of containment required under paragraph (1)(e) changes during transport, the carrier must show those changes on the shipping document or on a document attached to the shipping document.

How the carrier shows the change in quantity is the carrier's choice. The carrier can change the number used to express quantity or the carrier may mark on the shipping document, or on a document attached to the shipping document, the additions to or the subtractions from the number used to express quantity.

The quantity of dangerous goods is expressed in kilograms for solids, in litres for liquids and in kilograms or litres for gases. It may also be expressed as a number of items.

3.6 Additional Information on a Shipping Document

ERAP

(1) In addition to the information required by subsection 3.5(1), the shipping document for dangerous goods for which an approved ERAP is required under subsection 7(1) of the Act must include

- ERAP reference number

(a) the ERAP reference number issued by Transport Canada, preceded or followed by the letters "ERAP" or "PIU"; and

- 24-hour number

(b) the ERAP telephone number required under paragraph 7.3(2)(f).

Phone numbers

(2) If the 24-hour number required by paragraph 3.5(1)(f) and the ERAP telephone number are the same, that number may be shown on the same line on the shipping document.

(3) In addition to the information required by subsection 3.5(1), the following information must be included on a shipping document:

Transport by vessel

(a) for dangerous goods in transport by vessel,

- Class 3 flash point

(i) the flash point for dangerous goods included in Class 3, Flammable Liquids, and

- marine pollutants

(ii) for dangerous goods that are marine pollutants under section 2.7 of Part 2, Classification, the words "marine pollutant" or "polluant marin" and, for a pesticide that is a marine pollutant, the name and concentration of the most active substance in the pesticide;

Class 4.1

(b) for dangerous goods included in Class 4.1, Flammable Solids, the control and emergency temperatures shown in section 2.4.2.3.2.3 of Chapter 2.4 of the UN Recommendations, if applicable;

Class 5.2

(c) for dangerous goods included in Class 5.2, Organic Peroxides, the control and emergency temperatures shown in section 2.5.3.2.4 of Chapter 2.5 of the UN Recommendations, if applicable; and

Class 7

(d) for dangerous goods included in Class 7, Radioactive Materials, the additional information required for transport documents under the "Packaging and Transport of Nuclear Substances Regulations".

3.6.1 Consignor's Certification

Shipping document includes consignor's certification

(1) Beginning on July 15, 2015, a shipping document must include, after the information required under section 3.5, one of the following certifications:

- consignor certifies documentation, classification, packaging, safety marks, etc.

(a) "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.";

(b) the certification set out in section 172.204 of 49 CFR;

(c) the certification set out in section 5;4.1.6 of the ICAO Technical Instructions;

(d) the certification set out in section 5.4.1.6 of the IMDG Code; or

(e) the certification set out in section 5.4.1.6 of the UN Recommendations.

- person who can certify

(2) The certification must be made by an individual who is the consignor or by an individual acting on behalf of the consignor and must set out that individual's name.

- not applicable to large container with residue

(3) This section does not apply in respect of a large means of containment that contains a residue.

3.7 Location of a Shipping Document: Road

Road vehicle: location of shipping document

The driver of a power unit that is attached to or is part of the cargo unit of a road vehicle transporting dangerous goods must ensure that a copy of the shipping document is kept, as follows:

- driver in cab

(a) if the driver is in the power unit, in a pocket mounted on the driver's door or within the driver's reach; or

- driver not in cab

(b) if the driver is out of the power unit, in a pocket mounted on the driver's door, on the driver's seat or in a location that is clearly visible to anyone entering through the driver's door.

3.8 Location of a Shipping Document and Consist: Rail

Rail vehicle: location of shipping document

The person in charge of a train transporting dangerous goods must ensure that a copy of the shipping document and, when a consist is required, a copy of the consist are kept,

- crew member present

(a) when one or more members of the train crew are present, in the possession of one of them; or

- crew member not present

(b) when no member of the train crew is present, in the first locomotive.

3.9 Location of a Shipping Document: Marine

Vessel: location of dangerous goods information

(1) The master of a vessel containing dangerous goods or the master in control of a vessel containing dangerous goods must have readily available on or near the bridge of the vessel a paper copy or electronic copy of

(a) the shipping document; or

(b) a list that includes the classification of the dangerous goods.

Road or rail vehicle on a vessel

(2) If dangerous goods are transported by vessel on board a road vehicle that is accompanied by one or more drivers or a railway vehicle that is accompanied by one or more members of the train crew, a driver or a member of the train crew must notify the master of the vessel or the marine carrier of the presence of the dangerous goods and make available to the master a copy of the shipping document. However, the shipping document must be kept, for the road vehicle, in accordance with section 3.7 and, for the railway vehicle, in the possession of a member of the train crew.

3.10 Location of a Shipping Document: Storage in the Course of Transportation

Storage during transport: location of shipping document

(1) A carrier must ensure that a shipping document is placed in a waterproof receptacle that is securely attached to or near the means of containment containing the dangerous goods, at a readily identifiable and accessible location, when the dangerous goods are in transport if

- unsupervised area

(a) they are left in an unsupervised area

(i) after being unloaded from a means of transport,

(ii) after the cargo unit of a road vehicle containing them has been disconnected from the power unit, or

(iii) when the railway vehicle containing them is no longer part of a train; and

(b) possession of the dangerous goods has not been transferred to another person.

- supervised area

(2) When dangerous goods in transport are left in a supervised area, the person in charge of the supervised area is considered to have taken possession of the dangerous goods. The carrier must leave a copy of the shipping document with that person, who must keep it and give it to the next person who takes possession of the dangerous goods.

- supervisor absent

(3) When the person in charge of a supervised area is absent from the area, that person must ensure that the copy of the shipping document is

(a) placed in a waterproof receptacle securely attached to or near the means of containment containing the dangerous goods, at a readily identifiable and accessible location; or

(b) left in the possession of an employee who is present in the supervised area and is designated for this purpose by the person in charge of the supervised area.

- shipping document left at office

(4) Despite the locations specified in subsections (1) to (3), when dangerous goods that are in transport by road vehicle, railway vehicle or vessel are stored in a supervised or unsupervised area, the shipping document or an electronic copy of it may be left at the office of a person referred to in one of the following paragraphs if the conditions in subsections (5) and (6) are complied with:

(a) the rail dispatcher for the area in which the railway vehicle is located;

(b) the person responsible for the port at which the dangerous goods are located; or

(c) the marine terminal manager at the terminal where the dangerous goods are located.

- shipping document left at office

(5) When a shipping record is left at the office of a person referred to in subsection (4),

(a) use of the telephone number of that office must be approved in accordance with subsection (6); and

(b) that person or that person's representative must provide immediately, at the request of a federal, provincial or municipal official including a member of a fire department, a facsimile or electronic copy of the shipping record or, if requested, a voice description of the information on the shipping record.

- CANUTEC approval in writing

(6) The telephone number of the office of a person referred to in subsection (4) must not be used to comply with subsection (5), unless that person gives CANUTEC the following information and receives approval, in writing, from CANUTEC to use that telephone number:

(a) the name and address of the person;

(b) the telephone number of the office of the person;

3.10 Location of a Shipping Document: Storage in the Course of Transportation *continued*

(c) the physical area to which the telephone number applies and, in the case of a port or a marine terminal, evidence that public access to the area is controlled;

(d) the period of time, not to exceed 5 years, for which CANUTEC's approval is requested; and

(e) the dangerous goods to which the approval applies.

- approval may be revoked

(7) The Director General may revoke, in writing, the approval to use a telephone number if

(a) the person referred to in subsection (4), or that person's representative, does not answer the telephone;

(b) the person referred to in subsection (4), or that person's representative, does not provide immediately, at the request of a federal, provincial or municipal official including a member of a fire department, a facsimile or an electronic copy of the shipping record or, if requested, a voice description of the information on the shipping record; or

(c) public access to a port or marine terminal is not controlled.

3.11 Keeping Shipping Document Information

Copy of shipping document after transport

(1) A consignor must be able to produce a copy of any shipping document

- consignor

(a) for two years after the date the shipping document or an electronic copy of it was prepared or given to a carrier by the consignor;

(b) for dangerous goods imported into Canada, for two years after the date the consignor ensured that the carrier, on entry into Canada, had a shipping document or an electronic copy of one; and

(c) within 15 days after the day on which the consignor receives a written request from an inspector.

- carrier

(2) When dangerous goods are no longer in transport, each carrier who transported the dangerous goods must be able to produce a copy of the shipping document that related to the dangerous goods and was required to be in the possession of that carrier while the dangerous goods were in transport

(a) for two years after the date the dangerous goods are no longer in transport; and

(b) within 15 days after the day on which the carrier receives a written request from an inspector.

- international consignments

(3) Subsection (2) does not apply to a carrier who transported dangerous goods

(a) from a place outside Canada, through Canada to a place outside Canada or for a portion of such transportation; or

(b) entirely outside Canada

(i) on board a vessel, or

(ii) on board an aircraft that is registered in Canada and leased to a foreign carrier.

- handling only

(4) Subsection (2) does not apply to a carrier who is involved only in handling the dangerous goods, including storing them in the course of transport.

- electronic copies

(5) The shipping documents referred to in this section may be kept as electronic copies.

PART 4
Dangerous Goods Safety Marks

Background

Dangerous goods safety marks are required to be displayed on a means of containment containing dangerous goods in transport. Dangerous goods safety marks include labels, placards, orange panels, signs, marine pollutant marks, numbers, letters, abbreviations and words used to identify dangerous goods and to show the nature of the danger they pose.

Dangerous goods safety marks give a quick identification of dangerous goods in the event of an emergency situation such as an accident or an accidental release of dangerous goods from a means of containment.

Dangerous goods safety marks are also an awareness tool for people involved in transportation, including truck drivers, train crews, loading dock workers, reception personnel at a lab or a hospital and aircraft loading personnel.

Generally, labels are displayed on small means of containment and placards are displayed on large means of containment.

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:

Act
aircraft
CANUTEC
capacity
carrier
Category B
49 CFR
class
compatibility group
consignment
consignor
consolidation bin
cylinder
dangerous goods
dangerous goods safety mark
ERAP
flash point
gas
gross mass
handling
ICAO Technical Instructions
import
infectious substance
in transport
large means of containment
liquid
means of containment
means of transport
net explosives quantity
offer for transport
overpack
packing group
person
prescribed
primary class
public safety
railway vehicle
release
road vehicle
ro-ro ship
safety mark
shipping name
small means of containment
solid
special provision
subsidiary class
substance
technical name
transport index
UN number
UN Recommendations
vessel

4.12 UN Numbers on a Small Means of Containment or on a Tag

UN number beside or on a label

(1) When dangerous goods in transport are in a small means of containment on which the primary class label for the dangerous goods is displayed, the UN number for the dangerous goods must be displayed on or next to the primary class label.

UN number on a tag

(2) When the primary class label for dangerous goods in transport is displayed on a tag in accordance with subsection 4.10(4), the UN number must also be displayed on the tag on or next to the primary class label.

4.13 *Repealed*

4.14 Class 7, Radioactive Material

Class 7: information on label

(1) For dangerous goods included in Class 7, Radioactive Material, the label or placard required to be displayed by this Part must be determined in accordance with the "Packaging and Transport of Nuclear Substances Regulations".

(2) For dangerous goods included in Class 7, Radioactive Material, the following information must be determined in accordance with the "Packaging and Transport of Nuclear Substances Regulations", and must be displayed on the primary class label for the dangerous goods:

(a) the name or symbol of the radionuclide, except that if there is a mixture of radionuclides, the name or symbol of the most restrictive of the radionuclides in the mixture; and

(b) the activity and the transport index of the dangerous goods.

4.15 Placards on a Large Means of Containment

Placard and UN number on large container

(1) The primary class placard for each of the dangerous goods contained in a large means of containment, other than a vessel or an aircraft, must be displayed on each side and on each end of the large means of containment.

Different UN numbers

(2) If two or more dangerous goods have different UN numbers but are identified by the same placard or placards, the placard or placards are required to be displayed only once on each side and on each end of a large means of containment.

Each placard needs to be displayed only once on each side and each end of a large means of containment regardless of how many products in the large means of containment have that class (primary or subsidiary).

For example, if UN1052, HYDROGEN FLUORIDE, ANHYDROUS (primary class 8 and subsidiary class 6.1), and UN1541, ACETONE CYANOHYDRIN, STABILIZED (class 6.1), are transported together in a truck, only 2 placards are required to be displayed on each side and on each end of the truck: the Class 8 placard (Corrosives) and the Class 6.1 placard (Toxic Substances).

4.15.1 Subsidiary Class Placards on a Large Means of Containment

Placard for subsidiary class

A subsidiary class placard for dangerous goods must be displayed, next to the primary class placard for the dangerous goods, on each side and on each end of a large means of containment if the dangerous goods require an ERAP and

(a) have a subsidiary class of Class 1, Explosives, in which case the placard is the one illustrated for Class 1.1, 1.2 or 1.3 in the appendix to this Part;

(b) have a subsidiary class of Class 4.3, Water-reactive Substances, in which case the placard is the one illustrated for Class 4.3 in the appendix to this Part;

(c) have a subsidiary class of Class 6.1, Toxic Substances, and are included in Packing Group I due to inhalation toxicity, in which case the placard is the one illustrated for Class 6.1 in the appendix to this Part; or

(d) have a subsidiary class of Class 8, Corrosives, and are UN2977, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE, or UN2978, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile excepted, in which case the placard is the one illustrated for Class 8 in the appendix to this Part.

4.15.2 UN Numbers on a Large Means of Containment

UN number also required

UN numbers, except UN numbers for dangerous goods included in Class 1, Explosives, must be displayed on a large means of containment in accordance with subsection 4.8(2) if the dangerous goods

(a) are in a quantity or concentration for which an ERAP is required; or

(b) are a liquid or a gas in direct contact with the large means of containment.

4.15.3 Placards and UN Numbers on a Large Means of Containment

Placard and UN number required

A placard, or a placard and UN number, must be displayed on each side and on each end of a large means of containment, except that

- may be displayed on frame

(a) in the case of a large means of containment that is permanently connected to a frame, such as a truck frame or a supporting frame for the means of containment, the placard, or the placard and UN number, may be displayed on the frame if the resulting position of the placard, or the placard and UN number, is equivalent on each side and on each end of the means of containment;

- may be displayed on vehicle

(b) in the case of a large means of containment that is a trailer unit, the placard, or the placard and UN number, may be displayed on the front of the vehicle that is attached to the trailer unit rather than on the leading end of the trailer unit; and

The trailer unit of a truck includes a tank.

- may be displayed on IBC

(c) in the case of a large means of containment that is an intermediate bulk container (IBC) with a capacity greater than 450 L but less than or equal to 3,000 L,

(i) a placard and UN number may be displayed on two opposite sides of the IBC, or

(ii) a label for each primary and subsidiary class as well as a UN number and a shipping name may be displayed on two opposite sides of the IBC.

When IBCs that have labels on them are inside a road vehicle or railway vehicle or are loaded onto a road vehicle or railway vehicle, the requirements of this Part for the display of placards on the road vehicle or railway vehicle still apply.

4.15.4 Visibility of Labels, Placards and UN Numbers on a Large Means of Containment

- placards and UN numbers visible on outer container

(1) When a large means of containment that has labels or placards displayed on it is inside another large means of containment and those labels or placards are not visible, the placards required by this Part must be displayed on the outer large means of containment. The UN numbers that are required by this Part must also be displayed on the outer large means of containment.

- labels, placards and UN numbers visible during transport

(2) When a large means of containment that has labels, placards, labels and UN numbers, or placards and UN numbers, displayed on it is loaded onto another large means of containment and those labels, placards, labels and UN numbers, or placards and UN numbers, are visible, the placards, or placards and UN numbers, are not required to be displayed on the other large means of containment.

For example, IBCs carried on a flatbed truck.

4.16 DANGER Placard

The display of a DANGER placard is not mandatory, but if it is not displayed, compliance with section 4.15 is required and the primary class placards for the dangerous goods must be displayed. However, compliance with section 4.15 is always required for dangerous goods that are not allowed to be identified by the DANGER placard but that may be loaded into the same large means of containment.

***DANGER* placard allowed for dangerous goods that require different placards**

(1) Except in the case of the dangerous goods listed in subsection (2) or a flammable gas referred to in subsection (3), a DANGER placard is permitted to be displayed on a large means of containment instead of any other placard required by section 4.15, if

(a) the large means of containment contains two or more dangerous goods that require different placards; and

(b) the dangerous goods loaded into the large means of containment are contained in two or more small means of containment.

***DANGER* placard not allowed for certain dangerous goods**

(2) The DANGER placard referred to in subsection (1) must not be displayed on a large means of containment for

(a) dangerous goods that have a gross mass greater than 1,000 kg, are included in the same class and are offered for transport by one consignor;

(b) dangerous goods that require an ERAP;

(c) dangerous goods included in Class 1, Explosives;

(d) dangerous goods included in Class 2.3, Toxic Gases;

(e) dangerous goods included in Class 4.3, Water-reactive Substances;

(f) dangerous goods included in Class 5.2, Organic Peroxides, Type B, liquid or solid, that require a control or emergency temperature;

(g) dangerous goods included in Class 6.1, Toxic Substances, that are subject to special provision 23; and

(h) dangerous goods included in Class 7, Radioactive Materials, that require a Category III – Yellow label.

Flammable gas on vehicle transported by vessel

(3) If a road vehicle or railway vehicle to be transported by vessel contains a flammable gas, the flammable gas placard illustrated in the appendix to this Part must be displayed on the road vehicle or railway vehicle.

4.16.1 Placarding Exemption for Dangerous Goods Having a Gross Mass of 500 kg or Less

Subsection (1) provides an exemption from placarding requirements if the dangerous goods in or on a road vehicle or railway vehicle have a gross mass that is less than or equal to 500 kg.

Subsection (2) sets out which dangerous goods cannot be counted in the 500 kg and are, therefore, subject to the placarding requirements.

For example, a road vehicle contains 2,300 kg of dangerous goods. Of that quantity, 2,000 kg are dangerous goods that meet one of the conditions in subsection (2) and 300 kg are dangerous goods that do not meet any of the conditions in subsection (2).

The 2,000 kg of dangerous goods that meet one of the conditions in subsection (2) require a placard, but the remaining 300 kg of dangerous goods do not require a placard.

Placard not required for 500 kg or less of dangerous goods

(1) Except in the case of the dangerous goods listed in subsection (2), a placard is not required to be displayed on a road vehicle or railway vehicle if the dangerous goods in or on the road vehicle or railway vehicle have a gross mass that is less than or equal to 500 kg.

Dangerous goods not included in exemption

(2) The exemption set out in subsection (1) does not apply to dangerous goods

- **(a)** requiring an ERAP;
- **(b)** requiring the display of a subsidiary class placard in accordance with section 4.15.1;
- **(c)** included in Class 1, Explosives, except for
  - **(i)** explosives referred to in subsection 4.17(1), and
  - **(ii)** explosives included in Class 1.1, 1.2, 1.3 or 1.5, if
    - **(A)** the explosives are not subject to special provision 85 or 86 and have a net explosives quantity that is less than or equal to 10 kg, or
    - **(B)** the explosives are subject to special provision 85 or 86 and the number of articles of explosives is less than or equal to 1,000;
- **(d)** included in Class 2.1, Flammable Gases, if the road vehicle or railway vehicle is to be transported by vessel;
- **(e)** included in Class 2.3, Toxic Gases;
- **(f)** included in Class 4.3, Water-reactive Substances;
- **(g)** included in Class 5.2, Organic Peroxides, Type B, liquid or solid, that require a control or emergency temperature;
- **(h)** included in Class 6.1, Toxic Substances, that are subject to special provision 23; or
- **(i)** included in Class 7, Radioactive Materials, that require a Category III – Yellow label.

4.17 Class 1, Explosives

Explosives

(1) Despite section 4.15, a placard is not required to be displayed for explosives that are included in

- Class 1.4

(a) Class 1.4, except for UN0301, AMMUNITION, TEAR-PRODUCING, and are in a quantity that is less than or equal to 1,000 kg net explosives quantity; or

(b) Class 1.4S and are in any quantity.

- more than one division

(2) Despite section 4.15, only the placard for the explosives with the lowest division number is required to be displayed for explosives that are included in more than one division and are in a large means of containment, except in the following cases:

(a) when explosives included in Class 1.2 and Class 1.5 are transported together, the placard for Class 1.1 must be displayed; and

(b) when explosives included in Class 1.4 and Class 1.5 are transported together, the placard for Class 1.5 must be displayed.

4.18 Options for Class 2, Gases

Gases
- more than one primary class or UN number

Despite section 4.15, if a road vehicle transporting toxic gases, flammable gases or oxygen, or gases included in Class 2.2, Non-Flammable and Non-toxic Gases, is placarded with the Toxic Gases placard, the following placards are not required to be displayed on the road vehicle:

(a) the Flammable Gases placard;

(b) the Oxidizing Gases placard; and

(c) the Non-Flammable and Non-toxic Gases placard.

4.18.1 Class 2, Gases: Placards for Oxidizing Gases

Oxidizing gas placard

When dangerous goods included in Class 2, Gases, and contained in a large means of containment are oxidizing gases, the oxidizing gas placard illustrated in the appendix to this Part must be displayed on the large means of containment for the following dangerous goods instead of the placard required by section 4.15, but if an ERAP is required for the dangerous goods the UN number must also be displayed:

(a) UN1072, OXYGEN, COMPRESSED;

(b) UN1073, OXYGEN, REFRIGERATED LIQUID;

(c) UN3156, COMPRESSED GAS, OXIDIZING, N.O.S.; and

(d) UN3157, LIQUEFIED GAS, OXIDIZING, N.O.S.

4.18.2 Class 2, Gases: Placards for UN1005, ANHYDROUS AMMONIA

Anhydrous ammonia placard

When UN1005, ANHYDROUS AMMONIA, is contained in a large means of containment, the large means of containment must have displayed on it

(a) the Class 2.3 placard and a UN number; or

(b) the anhydrous ammonia placard and, on at least two sides, the words "Anhydrous Ammonia, Inhalation Hazard" or "Ammoniac anhydre, dangereux par inhalation" in letters

(i) at least 6 mm wide and 100 mm high in the case of a tank car,

(ii) at least 4 mm wide and 25 mm high in the case of a portable tank, and;

(iii) at least 6 mm wide and 50 mm high in the case of all other large means of containment.

4.18.3 Class 2, Gases: Placards for Tube Trailers

Placards for tube trailers

When dangerous goods included in Class 2, Gases, are contained in a combination of tubes that are a single unit as a result of being interconnected through a piping arrangement and are permanently mounted on a structural frame for transport, the combination of tubes may be placarded as if it were one large means of containment.

4.19 Placards and UN Numbers on a Compartmentalized Large Means of Containment

Compartmentalized container

- different primary classes

(1) When dangerous goods included in different primary classes are transported in different compartments of a compartmentalized large means of containment,

(a) the primary class placard and the UN number for the dangerous goods in each compartment must be displayed on each side of that compartment; and

(b) each placard and UN number displayed in accordance with paragraph (a) must be displayed on each end of the compartmentalized large means of containment but each specific placard need only be displayed once on each end.

- same primary class

(2) When all compartments in a compartmentalized large means of containment contain dangerous goods included in the same primary class,

(a) the primary class placard must be displayed on each side and on each end of the compartmentalized large means of containment; and

(b) the UN number of the dangerous goods in a compartment must be displayed on each side of that compartment and on each end of the compartmentalized large means of containment, except that, if all the dangerous goods are included in Class 3, Flammable Liquids, only the UN number of the dangerous goods with the lowest flash point is required to be displayed on each side and on each end of the compartmentalized large means of containment.

- ethanol and gasoline mixture

(3) Despite paragraph (2)(b), if a compartmentalized large means of containment contains UN3475, ETHANOL AND GASOLINE MIXTURE, the number "3475" must be displayed, in addition to the UN number – without the prefix "UN" – of the dangerous goods with the lowest flash point, on each side and on each end of the compartmentalized large means of containment.

4.20 Elevated Temperature Sign

Elevated temperature sign

- temperatures

(1) In addition to the requirements for placards and UN numbers in section 4.15, the elevated temperature sign must be displayed for dangerous goods that are contained in a large means of containment and that are offered for transport or transported at a temperature greater than or equal to

(a) 100°C if the dangerous goods are in a liquid state; and

(b) 240°C if the dangerous goods are in a solid state.

- location of placards

(2) The elevated temperature sign must be displayed on each side and on each end of the large means of containment next to each primary class placard for the dangerous goods or, if there is a subsidiary class placard, next to the subsidiary class placard.

PART 5
Means of Containment

Table of Contents

PART 5
Means of Containment

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:

aerosol container
aircraft
capacity
Category A
Category B
certification safety mark
49 CFR
class
compatibility group
consolidation bin
culture
cylinder
dangerous goods
flash point
gas
gross mass
handling
IMDG Code
IMDG Code, 29th Amendment
import
infectious substance
in standard
in transport
large means of containment
liquid
means of containment
means of transport
net explosives quantity
offer for transport
packing group
person
public safety
railway vehicle
release
road vehicle
safety requirements
safety standards
small means of containment
standardized means of containment
subsidiary class
substance
tube
Type 1A means of containment
Type 1B means of containment
Type 1C means of containment
UN Recommendations
UN standardized means of containment
vessel

5.1 *Repealed*

5.1.1 Selecting and Using Means of Containment

Required or permitted means of containment

(1) A person must not handle, offer for transport, transport or import dangerous goods in a means of containment unless the means of containment is required or permitted by this Part to be used for the transportation of the dangerous goods.

Standardized means of containment in standard

(2) A person must not handle, offer for transport or transport dangerous goods in a standardized means of containment unless the standardized means of containment is in standard.

No accidental release of dangerous goods

(3) A person must not handle, offer for transport or transport dangerous goods in a means of containment that is required or permitted by this Part unless the means of containment is 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.

5.2 Requirements for a Standardized Means of Containment to be in Standard

Certification safety marks

A standardized means of containment is in standard with a specific safety standard if it has displayed on it the certification safety marks required by the standard and

(a) was in compliance with the requirements of the standard when each certification safety mark was first displayed; and

(b) remains in compliance with the requirements of the standard that had to be complied with when each certification safety mark was first displayed.

5.3 Certification Safety Marks on a Means of Containment

Visible and legible

Any mark required by a safety standard is a certification safety mark and must be visible and legible when it is displayed on a means of containment.

Under section 8 of the Act, a person must not sell, offer for sale, deliver, distribute, import or use a standardized means of containment unless it has displayed on it all the applicable prescribed safety marks.

5.4 Loading and Securing

Loading and securing

A person must load and secure dangerous goods in a means of containment and must load and secure the means of containment on a means of transport in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the means of transport that could lead to an accidental release of the dangerous goods.

5.5 Filling Limits

Specified filling limit

(1) A person filling a means of containment with dangerous goods must not exceed the maximum quantity limit specified in a safety standard or safety requirement applicable to that means of containment.

Specified filling limit

(2) If the maximum quantity limit for a means of containment is not specified in a safety standard or safety requirement, the person filling the means of containment with dangerous goods

(a) must not exceed the maximum quantity limit established by the manufacturer for the means of containment; and

(b) must ensure that the means of containment could not become liquid full at any temperature that is less than or equal to 55°C.

5.6 UN Standardized Means of Containment

UN marks

A means of containment is a UN standardized means of containment if it has displayed on it the applicable UN marks illustrated in Chapter 6.1, Chapter 6.3 and Chapter 6.5 of the UN Recommendations and

In compliance with Canadian standards

(a) it is in compliance with

(i) sections 2 and 3 and Part I of CGSB-43.125 for a Type P620 means of containment,

(ii) sections 2 and 3 and Part I of CGSB-43.146, or

(iii) sections 2 and 3 and Part 1 of TP14850; or

In compliance with international standards

(b) it was manufactured outside Canada in compliance with Chapter 6.1, 6.3 or 6.5 of the UN Recommendations and with the national regulations of the country of manufacture.

Class 1, Explosives

5.7 Compatibility Groups

Explosives: compatibility group letters

(1) A person must not load or transport with other explosives in the same means of transport, except for a vessel, explosives that have a compatibility group letter listed in column 1 of a row in the following table unless the compatibility group letter of the other explosives is listed in column 2 of the same row:

TABLE

Column 1	*Column 2*
A	A
B	B, S
C	C, D, E, N, S
D	C, D, E, N, S
E	C, D, E, N, S
F	F, S
G	G, S
H	H, S
J	J, S
K	K, S
L	L
N	C, D, E, N, S
S	B, C, D, E, F, G, H, J, K, N, S

Compatibility groups C, D,E, N or S

(2) For a mixed load of two or more explosives with compatibility groups C, D, E, N or S, the compatibility group of the mixed load is the first compatibility group of E, D, C, N or S present in the mixed load.

Detonators in compatibility group B

(3) Despite subsection (1), detonators in compatibility group B may be loaded or transported in the same road vehicle with explosives in compatibility group D or N. The compatibility group of the mixed load is D.

Explosive articles in compatibility group G

(4) Despite subsection (1), explosive articles included in compatibility group G, except for fireworks with UN number UN0333, UN0334, UN0335 or UN0336, may be loaded or transported in the same road vehicle together with explosive articles included in compatibility group C, D or E. The compatibility group of the mixed load is E.

Mixed load with compatibility group S

(5) For a mixed load of two explosives with one of the compatibility groups being S, the compatibility group of the mixed load is that of the other compatibility group.

5.8 Means of Containment for Class 1, Explosives

Means of containment for explosives

A person must not handle, offer for transport or transport dangerous goods included in Class 1, Explosives, unless they are in a means of containment that is selected and used in accordance with CGSB-43.151.

5.9 *Repealed*

Class 2, Gases

5.10 Means of Containment for Class 2, Gases

Means of containment for gases

(1) A person must not offer for transport, handle or transport dangerous goods included in Class 2, Gases, in a means of containment unless the means of containment is manufactured, selected and used in accordance with

- road transport

(a) for transport by road vehicle,

- **(i)** CGSB-43.123, if the gas is included in Class 2.1, Flammable Gases or Class 2.2, Non-flammable and Non-toxic Gases,
- **(ii)** CSA B340,
- **(iii)** CSA B342,
- **(iv)** CSA B622, except clause 4.3 of that standard, and, despite any indication to the contrary in CSA B620, Annex B of CSA B620,
- **(v)** CSA B625, or
- **(vi)** TP14877, if the means of containment is a ton container;

- rail transport

(b) for transport by railway vehicle,

- **(i)** CGSB-43.123, if the gas is included in Class 2.1, Flammable Gases or Class 2.2, Non-flammable and Non-toxic Gases,
- **(ii)** TP14877,
- **(iii)** CSA B340,
- **(iv)** CSA B342, or
- **(v)** CSA B625;

- air transport

(c) for transport by aircraft,

- **(i)** CGSB-43.123, if the gas is included in Class 2.1, Flammable Gases or Class 2.2, Non-flammable and Non-toxic Gases,
- **(ii)** CSA B340, or
- **(iii)** CSA B342; and

- marine transport

(d) for transport by vessel,

- **(i)** CGSB-43.123, if the gas is included in Class 2.1, Flammable Gases or Class 2.2, Non-flammable and Non-toxic Gases,
- **(ii)** TP14877,
- **(iii)** CSA B340,
- **(iv)** CSA B342,
- **(v)** CSA B622, except clause 4.3 of that standard, and, despite any indication to the contrary in CSA B620, Annex B of CSA B620, or
- **(vi)** CSA B625.

Standards for cylinder, sphere or tube

(2) For the purposes of this section, clause 5.1.3(a) of CSA B340 must be read as requiring a cylinder, sphere or tube to be inspected before it is filled by verifying, through its markings or, in the case of a horizontally mounted container, the markings affixed to the vehicle or frame used to transport the container, that the cylinder, sphere or tube

(a) was manufactured in accordance with a container specification that is designated by the prefix “CTC”, “ICC”, “TC” or “DOT” and is listed in Table 29 of CSA B339;

5.10 Means of Containment for Class 2, Gases *continued*

(b) is an equivalent container as defined in CSA B340 and was manufactured in accordance with a container specification that is designated by the prefix "BTC", "CRC", "ICC" or "DOT";

(c) was manufactured in accordance with a container specification that is designated by the prefix "BTC", "CRC", "ICC" or "DOT" followed by "3", "3A480X", "3B", "3BN", "4B240FLW", "8", "8AL" or "8WC";

(d) has the letters "CRC", "BTC", "CTC" or "TC" displayed on it and was manufactured before January 1, 1993 in accordance with the conditions of a special permit that was issued under the regulations for the transportation of dangerous goods by rail in force before December 5, 1991; or

(e) has the letters "ICC" or "DOT" displayed on it and was manufactured before January 1, 1993 in accordance with a packaging or handling exemption that was issued under Subpart B of Part 107 of 49 CFR.

Requalification of cylinder, sphere or tube

(3) For the purposes of this section, clause 5.1.4 of CSA B340 must be read as requiring a cylinder, sphere or tube that is referred to in paragraph (2)(a), (b) or (c) and is due for requalification to be requalified – before being filled – in accordance with the requirements of

(a) CSA B339, if the requalification is performed in Canada;

(b) Part 180 of 49 CFR, if the requalification is performed in the United States; or

(c) CSA B339 or Part 180 of 49 CFR, if the requalification is performed outside both Canada and the United States.

Requalification standards

(4) For the purposes of this section, clause 5.1.4 of CSA B340 must be read as requiring

(a) a cylinder, sphere or tube that is referred to in paragraph (2)(d) or (e) and that is due for requalification to be filled and requalified in accordance with the applicable special permit or exemption; and

(b) the requalification to be performed by a facility that is registered in accordance with CSA B339 or approved in accordance with Subpart I of Part 107 of 49 CFR.

Requalification requirements

(5) For the purposes of this section, clause 5.1.4 of CSA B340 must be read as requiring a cylinder, sphere or tube that is referred to in subsection (2) that is due for requalification and that does not meet the requirements of the prefill inspection to be rejected and not be filled until the cause for rejection has been corrected.

Report of requalification, repair, etc.

(6) For the purposes of this section, the following requirements apply in respect of a report of requalification, repair, reheat treatment or rebuilding that is referred to in clause 24.7 of CSA B339:

(a) the person who prepares the report must give a copy of it to the owner of the means of containment;

(b) the person who prepares the report and the owner must each keep a copy of the report for 10 years; and

(c) the owner must, during the 10-year period, give a copy of the report to any person to whom ownership of the means of containment is transferred.

CSA B342 standards

(7) For the purposes of this section, clause 4.1.7 of CSA B342 must be read as requiring a UN pressure receptacle, including its closures,

(a) to comply with the design, construction, initial inspection, and testing requirements set out in the edition of CSA B341 that was incorporated by reference in these Regulations at the time of manufacture;

(b) to comply with the design, construction, initial inspection, and testing requirements set out in an edition of CSA B341 that was not yet incorporated by reference in these Regulations at time of manufacture but for which early implementation was authorized by an equivalency certificate issued by the Minister; or

(c) to be marked with the letters "USA" in accordance with section 178.71(q)(3) of 49 CFR and to comply with the design, construction, initial inspection, and testing requirements set out in Subpart C of Part 178 of 49 CFR.

CSA B342, outer packaging standards

(8) For the purposes of this section, if a UN pressure receptacle is used in accordance with CSA B342 and an outer packaging is required by that standard,

(a) the UN pressure receptacle must be firmly secured within the outer packaging; and

(b) one or more inner packagings may be enclosed in the outer packaging, unless otherwise specified in clause 5 of CSA B342.

CSA B342, multiple element gas container

(9) For the purposes of this section, clause 4.2.3 of CSA B342 must be read as requiring a multipleelement gas container

(a) to comply with the design, construction, initial inspection, and testing requirements set out in the edition of CSA B341 that was incorporated by reference in these Regulations at the time of manufacture;

(b) to comply with the design, construction, initial inspection, and testing requirements set out in an edition of CSA B341 that was not yet incorporated by reference in these Regulations at time of manufacture but for which early implementation was authorized by an equivalency certificate issued by the Minister; or

(c) to be marked with the letters "USA", denoting the United States as the country of approval, in accordance with section 178.75(j)(1) of 49 CFR, and to comply with the design, construction, initial inspection, and testing requirements set out in Subpart C of Part 178 of 49 CFR.

CSA B342, cylinder for adsorbed gases

(10) For the purposes of this section, clause 5.5.1(b) of CSA B342 must be read as requiring a UN cylinder for adsorbed gases

(a) to comply with the design, construction, initial inspection, and testing requirements set out in the edition of CSA B341 that was incorporated by reference in these Regulations at the time of manufacture; or

(b) to be marked with the letters "USA" in accordance with section 178.71(q)(3) of 49 CFR and to comply with the design, construction, initial inspection, and testing requirements set out in Subpart C of Part 178 of 49 CFR.

5.10 Means of Containment for Class 2, Gases *continued*

CSA B622 standards

(11) For the purposes of this section, a person who uses a standardized means of containment in accordance with CSA B622 must use a means of containment that

(a) is manufactured in accordance with CSA B620 if it was manufactured in Canada on or after August 31, 2008; and

(b) is tested and inspected in accordance with CSA B620 if its most recent periodic re-test or periodic inspection was performed in Canada on or after August 31, 2008.

TC 51 portable tank standards

(12) Despite paragraph 11(a), a standardized means of containment that is a TC 51 portable tank and that is used in accordance with CSA B622 may be manufactured in accordance with CSA B620-09.

(13) For the purposes of subsection (12), the following requirements of CSA B622 do not apply:

(a) the requirement in clause 4.2 respecting TC 51 portable tanks; and

(b) the requirement in the footnote respecting TC 51 portable tanks after Table 1 to clause 4.4.3.

5.11 UN1950, AEROSOLS, and UN2037, GAS CARTRIDGES

Standards for aerosol containers and gas cartridges

Despite section 5.10, a person must not handle, offer for transport or transport dangerous goods that are UN1950, AEROSOLS, or UN2037, GAS CARTRIDGES, unless they are contained in a means of containment that is manufactured, selected and used in accordance with CGSB-43.123.

Classes 3, 4, 5, 6.1, 8 and 9, Dangerous Goods

5.12 Small Means of Containment

Standardized means of containment

(1) A person must not offer for transport, handle or transport dangerous goods included in Class 3, 4, 5, 6.1, 8 or 9 in a small means of containment unless it is a means of containment that is selected and used in accordance with Part II of CGSB-43.146 or a means of containment that is selected and used in accordance with sections 2 and 3 and with Part 2 of TP14850.

Reusing steel or plastic drums

(2) A person must not reuse a steel or plastic drum with a capacity greater than or equal to 150 L to handle, offer for transport or transport dangerous goods that are liquid and are included in Class 3, 4, 5, 6.1, 8 or 9 unless

(a) for a steel drum, the requirements for the reconditioning, remanufacturing and repair in Part II of CGSB-43.126 are complied with and the drum reconditioning, remanufacturing and repair facility is registered with Transport Canada in accordance with the requirements of Appendix A of CGSB-43.126; or

(b) for a plastic drum, the requirements for the reconditioning, remanufacturing and repair in Part III of CGSB-43.126 are complied with and the drum reconditioning, remanufacturing and repair facility is registered with Transport Canada in accordance with the requirements of Appendix A of CGSB-43.126.

Notice to initial user

(3) The manufacturer or subsequent distributor of a UN standardized small means of containment manufactured in Canada must provide a notice to the initial user in accordance with section 4.4 of TP14850. The manufacturer or subsequent distributor of a UN standardized intermediate bulk container (IBC) manufactured in Canada must provide a notice to the initial user in accordance with clause 4.8 of CGSB-43.146.

(4) A person must not reuse an IBC for liquids, or an IBC for solids, that is filled or discharged under pressure to offer for transport, handle or transport dangerous goods that are included in Class 3, 4, 5, 6.1, 8 or 9 unless it has been leak tested and inspected in accordance with clause 12.6 of CGSB-43.146.

Leak testing and inspection of IBCs before reuse

(5) In addition to the requirements set out in subsection (1), a person who uses a means of containment that is required under CGSB-43.146 for the offering for transport of dangerous goods must follow the requirements of clauses 12.2, 12.3 and 12.4 of CGSB-43.146.

Additional requirements under CGSB-43.146

5.13 *Repealed*

5.14 Large Means of Containment

(1) A person must not handle, offer for transport or transport dangerous goods included in Class 3, 4, 5, 6.1, 8 or 9 in a large means of containment unless it is manufactured, selected and used in accordance with

Standards for large means of containment

(a) for transport by road vehicle,

- road transport

- **(i)** the requirements of Part II of CGSB-43.146, if the means of containment is a UN standardized means of containment,
- **(ii)** CSA B621, except clause 8.2(b), and, despite any indication to the contrary in CSA B620, Annex B of CSA B620,
- **(iii)** CSA B625, or
- **(iv)** TP14877, if the means of containment is a ton container;

(b) for transport by railway vehicle,

- rail transport

- **(i)** the requirements of Part II of CGSB-43.146, if the means of containment is a UN standardized means of containment,
- **(ii)** TP14877, or
- **(iii)** CSA B625;

(c) for transport by aircraft, Part 12, Air, of these Regulations; and

- air transport

(d) for transport by vessel,

- marine transport

- **(i)** the requirements of Part II of CGSB-43.146, if the means of containment is a UN standardized means of containment,
- **(ii)** TP14877,
- **(iii)** CSA B621, except clause 8.2(b), and, despite any indication to the contrary in CSA B620, Annex B of CSA B620, or
- **(iv)** CSA B625.

(2) In addition to the requirements of subparagraphs (1)(a)(ii) and (d)(iii), a person who uses a standardized means of containment that is required by CSA B621 to offer for transport dangerous goods included in Class 3, 4, 5, 6.1, 8 or 9 must use a means of containment

CSA B620 and CSA B621

(a) manufactured in accordance with CSA B620 if the means of containment was manufactured in Canada on or after August 31, 2008; and

(b) tested and inspected in accordance with CSA B620 when the most recent periodic re-test or periodic inspection is performed in Canada on or after August 31, 2008.

(3) *Repealed*

(4) *Repealed*

5.14.1 to 5.14.3 *Repealed*

5.15 to 5.15.11 *Repealed*

Class 6.2, Infectious Substances

5.16 Means of Containment for Class 6.2, Infectious Substances

Means of containment for infectious substances

(1) A person must not offer for transport, handle or transport dangerous goods included in Category A or Category B of Class 6.2, Infectious Substances, unless the dangerous goods are in a means of containment that is manufactured, selected and used in accordance with CGSB-43.125.

(2) If the means of containment is made available as a kit, the packaging manufacturer and subsequent distributor must provide the packaging information required under section 4.4 of CGSB-43.125 to the packaging purchaser at each initial purchase and to a packaging user upon request.

TABLE *Repealed*

5.16.1 *Repealed*

5.16.2 *Repealed*

Class 7, Radioactive Materials

5.17 Means of Containment for Class 7, Radioactive Materials

Means of containment for radioactive materials

A person must not handle, offer for transport or transport dangerous goods included in Class 7, Radioactive Materials, in a means of containment unless the means of containment is in compliance with the "Packaging and Transport of Nuclear Substances Regulations".

Consolidation Bins

5.18 Consolidation Bins

Specifications for consolidation bin

A person must not use a consolidation bin to handle or transport dangerous goods in a road vehicle unless

(a) the capacity of the consolidation bin is less than or equal to 1.8 m^3 (64 cubic feet);

(b) the consolidation bin is reusable and constructed of plastic, wood or metal; and

(c) the consolidation bin is blocked or braced within the road vehicle.

PART 6
Training

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:

aircraft
certification safety mark
49 CFR
classification
dangerous goods
dangerous goods safety mark
emergency
ERAP
employer
handling
ICAO Technical Instructions
IMDG Code
inspector
means of containment
offer for transport
person
public safety
railway vehicle
release
road vehicle
safety requirements
safety standards
shipping documents
shipping name
train
vessel

6.1 Training Certificate Requirements

Training and certification

(1) A person who handles, offers for transport or transports dangerous goods must

(a) be adequately trained and hold a training certificate in accordance with this Part; or

(b) perform those activities in the presence and under the direct supervision of a person who is adequately trained and who holds a training certificate in accordance with this Part.

Employer's responsibility

(2) An employer must not direct or allow an employee to handle, offer for transport or transport dangerous goods unless the employee

(a) is adequately trained and holds a training certificate in accordance with this Part; or

(b) performs those activities in the presence and under the direct supervision of a person who is adequately trained and who holds a training certificate in accordance with this Part.

6.2 Adequate Training

Training related to duties

A person is adequately trained if the person has a sound knowledge of all the topics listed in paragraphs (a) to (m) that relate directly to the person's duties and to the dangerous goods the person is expected to handle, offer for transport or transport:

Topics of training

(a) the classification criteria and test methods in Part 2, Classification;

(b) shipping names;

(c) the use of Schedules 1, 2 and 3;

(d) the shipping document and train consist requirements in Part 3, Documentation;

(e) the dangerous goods safety marks requirements in Part 4, Dangerous Goods Safety Marks;

(f) the certification safety marks requirements, safety requirements and safety standards in Part 5, Means of Containment;

(g) the ERAP requirements in Part 7, Emergency Response Assistance Plan;

(h) the report requirements in Part 8 (Reporting Requirements);

(i) safe handling and transportation practices for dangerous goods, including the characteristics of the dangerous goods;

(j) the proper use of any equipment used to handle or transport the dangerous goods;

(k) the reasonable emergency measures the person must take to reduce or eliminate any danger to public safety that results or may reasonably be expected to result from an accidental release of the dangerous goods;

(l) for air transport, the aspects of training set out in Chapter 4, Training, of Part 1, General, of the ICAO Technical Instructions for the persons named in that Chapter and the requirements in Part 12, Air, of these Regulations; and

The ICAO Technical Instructions require the approval of training programmes for air carriers. Information may be obtained from the Chief, Dangerous Goods Standards, Civil Aviation, Transport Canada.

(m) for marine transport, the requirements of the IMDG Code and the requirements of Part 11 (Marine) of these Regulations.

PART 7
Emergency Response Assistance Plan

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PART 7
Emergency Response Assistance Plan

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases)

Act
capacity
class
classification
dangerous goods
emergency
ERAP
gas
infectious substance
large means of containment
liquid
means of containment
Minister
packing group
person
railway vehicle
release
road vehicle
shipping document
solid
substance
UN number

7.1 Application

Overview

This Part sets out

(a) the requirement to have an approved ERAP;

(b) the approval of an ERAP;

(c) the authorization to use an approved ERAP;

(d) the implementation of an approved ERAP; and

(e) the compensation for the authorized implementation of an approved ERAP.

7.2 Requirement to Have an Approved ERAP

(1) For the purposes of subsection 7(1) of the Act, an approved ERAP is required for

Quantity exceeding ERAP limit

(a) dangerous goods that have the same UN number and that are contained in a single means of containment, if the quantity of those dangerous goods exceeds the ERAP index in column 7 of Schedule 1;

Accumulation of dangerous goods

(b) dangerous goods, in a road vehicle or a railway vehicle, that have the same UN number and that are contained in more than one means of containment, if the total quantity of those dangerous goods exceeds the ERAP index in column 7 of Schedule 1 and are included in one of the following classes:

(i) Class 3, Flammable Liquids, with a subsidiary class of Class 6.1, Toxic Substances,

(ii) Class 4, Flammable Solids; Substances Liable to Spontaneous Combustion; Substances That on Contact with Water Emit Flammable Gases (Water-reactive substances),

(iii) Class 5.2, Organic Peroxides, that are Type B or Type C,

(iv) Class 6.1, Toxic Substances, that are included in Packing Group I;

ERAP requirements for large containers

(c) dangerous goods, in a road vehicle or a railway vehicle, that have the same UN number, and that are contained in more than one large means of containment, if the total quantity of those dangerous goods exceeds the ERAP index in column 7 of Schedule 1;

ERAP requirements for Class 1

(d) dangerous goods, in a road vehicle or a railway vehicle, that are included in Class 1, Explosives, and that are contained in one or more means of containment, if the total quantity of those dangerous goods exceeds the ERAP index in column 7 of Schedule 1 for the explosives with the lowest index number in that column;

ERAP requirements for Class 2

(e) dangerous goods that are included in Class 2, Gases, that have the same UN number, that are contained in more than one means of containment — each of which has a capacity greater than 225 L — that are a single unit as a result of being interconnected through a piping arrangement and that are permanently mounted on a structural frame for transport, if the total quantity of those dangerous goods exceeds the ERAP index in column 7 of Schedule 1;

ERAP requirements for tank cars

(f) any of the following dangerous goods that are transported by rail in a tank car, if the quantity of those dangerous goods in the tank car exceeds 10,000 L:

(i) UN1170, ETHANOL with more than 24% ethanol, by volume, ETHANOL SOLUTION with more than 24% ethanol, by volume, ETHYL ALCOHOL with more than 24% ethanol, by volume, or ETHYL ALCOHOL SOLUTION with more than 24% ethanol, by volume,

(ii) UN1202, DIESEL FUEL, GAS OIL, or HEATING OIL, LIGHT,

(iii) UN1203, GASOLINE, MOTOR SPIRIT, or PETROL,

(iv) UN1267, PETROLEUM CRUDE OIL,

(v) UN1268, PETROLEUM DISTILLATES, N.O.S., or PETROLEUM PRODUCTS, N.O.S.,

(vi) UN1863, FUEL, AVIATION, TURBINE ENGINE,

(vii) UN1987, ALCOHOLS, N.O.S.,

(viii) UN1993, FLAMMABLE LIQUID, N.O.S.,

(ix) UN3295, HYDROCARBONS, LIQUID, N.O.S.,

(x) UN3475, ETHANOL AND GASOLINE MIXTURE, with more than 10% ethanol, ETHANOL AND MOTOR SPIRIT MIXTURE, with more than 10% ethanol, or ETHANOL AND PETROL MIXTURE, with more than 10% ethanol, and

(xi) UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC; and

ERAP requirements for infectious substances

(g) any quantity of dangerous goods that are Risk Group 4 human pathogens within the meaning of the "Human Pathogens and Toxins Act".

ERAP requirements for ICAO, IMDG, or UN classification

(2) Any substance that would require an ERAP if its classification were determined in accordance with Part 2 (Classification) requires an approved ERAP if its appropriate classification in the ICAO Technical Instructions, the IMDG Code or the UN Recommendations is to be used under subsection 2.2(4).

7.3 Application for Approval of an ERAP

Application in writing for ERAP approval

(1) A person must apply to the Minister in writing for the approval of an ERAP.

Information required for application

(2) The application for approval must be signed by the applicant and must include a copy of the ERAP and the following information:

- name and contact information

(a) the name and contact information of the applicant;

- description of operations

(b) a description of the applicant's operations;

- person who assisted with application

(c) the name and contact information of any third party who assisted in the preparation of the application;

- classification and mode of transport

(d) the classification of the dangerous goods to which the ERAP relates and the mode of transport used;

- frequency, means of containment and location

(e) for each mode of transport used,

(i) the frequency of the transportation of the dangerous goods,

(ii) the type and specification of the means of containment used to transport the dangerous goods, and

(iii) the geographical area in which the dangerous goods are transported;

- ERAP phone number

(f) the ERAP telephone number, including the area code, at which a person identified in the ERAP can be reached at any time while the dangerous goods are handled or transported;

- communications systems

(g) a description of the communications systems that will be available at the location of a release or anticipated release of dangerous goods;

- third-party responders

(h) the name and contact information of any third-party emergency responders, their role and a copy of the agreement between the applicant and the third party;

7.3 Application for Approval of an ERAP *continued*

(i) the following information regarding the ERAP response equipment: *- response equipment*

- **(i)** a detailed list of the equipment,
- **(ii)** the location of the equipment,
- **(iii)** the name of the person responsible for the operation of the equipment at each location,
- **(iv)** for each location, the dangerous goods in respect of which the equipment is to be used during emergency measures, and
- **(v)** the geographical areas where the equipment at each location is to be used;

(j) the following information respecting the ERAP response personnel, including technical advisors, team leaders and response teams: *- response personnel*

- **(i)** their names and contact information,
- **(ii)** their responsibilities,
- **(iii)** any training they have taken, and
- **(iv)** a description of their knowledge and experience in respect of the dangerous goods;

(k) the response capability in respect of the dangerous goods, including *- response capability*

- **(i)** the measures that can be taken in response to the release or anticipated release,
- **(ii)** the persons responsible for taking the measures referred to in subparagraph (i), and
- **(iii)** the ERAP equipment that will be used to take those measures;

(l) an estimate of the time required for the response personnel and equipment to reach the location of the release or anticipated release and a description of the mobilization and deployment steps in respect of the response personnel and equipment; and *- response time and procedures*

(m) a potential incident analysis, including *- potential incident analysis*

- **(i)** the following scenarios:
  - **(A)** an anticipated release of dangerous goods,
  - **(B)** the release of less than 1% of the dangerous goods in a means of containment,
  - **(C)** the release of more than 50% of the dangerous goods in a means of containment, and
  - **(D)** the exposure to fire of a means of containment that contains dangerous goods,
- **(ii)** the possible consequences of the release or anticipated release for each scenario,
- **(iii)** the measures, organized by tier in accordance with section 7.8, to be taken in response to the release or anticipated release for each scenario, and
- **(iv)** the identification of the persons responsible for taking the measures referred to in subparagraph (iii).

7.4 Application for Approval of an ERAP – Emergency Response Contractors

Emergency response contractors

A person who is not required to have an approved ERAP under subsection 7(1) of the Act, but who is able to take measures to respond to a release or anticipated release of dangerous goods for the purposes of paragraph 7.1(b) of the Act, may apply to the Minister in writing for the approval of an ERAP. The application must include a copy of the ERAP and the information referred to in paragraphs 7.3(2)(a), (b), (d), (g) and (i) to (l).

7.5 Application for Approval of Changes to Approved ERAP

Changes to approved ERAP

(1) A person with an approved ERAP must, as soon as possible, apply to the Minister in writing for an approval of changes if any of the information referred to in paragraphs 7.3(2)(a) to (l) has changed since its approval.

(2) The application referred to in subsection (1) must be signed by the applicant and include

(a) a copy of the ERAP; and

(b) the information referred to in paragraphs 7.3(2)(a) to (l) that has changed.

7.6 Request for Review of Decision

Review of decision

(1) A person may request a review of the decision to refuse an application for approval of an ERAP or to revoke an ERAP approval within 30 days after being notified of the decision.

(2) The request must be made to the Minister in writing and must include the reasons why the decision should be revised.

Written reasons for request

7.7 Authorization to Use an Approved ERAP

Use of another person's ERAP

(1) A person who is required to have an ERAP under subsection 7(1) of the Act may use, as an authorized user, the ERAP of another person who received approval for the ERAP if

(a) the authorized user is not the producer of the dangerous goods to which the ERAP relates;

(b) the ERAP applies to the dangerous goods, the mode of transport, the means of containment and the geographical area in which the dangerous goods will be in transport;

(c) the person who received approval for the ERAP agrees to take measures to respond to a release or anticipated release of the dangerous goods to which the ERAP relates; and

(d) the person who received approval for the ERAP provides a written authorization to the authorized user before the information referred to in subsection 3.6(1) is entered on the shipping document.

Proof of authorization

(2) The authorized user must be able to produce a copy of the authorization referred to in paragraph (1)(d)

(a) for two years after the day on which the authorization is no longer in effect; and

(b) within 15 days after the day on which the authorized user receives a written request from the Minister.

7.8 Implementation of an Approved ERAP

Requirement to implement ERAP

(1) A person with an approved ERAP must implement it to tier 1 or tier 2 in response to a release or anticipated release of dangerous goods.

Tier 1 requirements

(2) A person who implements an approved ERAP to tier 1 must

(a) provide technical or emergency response advice as soon as possible after a request for the advice; and

(b) remotely monitor the response to the release or anticipated release.

Tier 2 requirements

(3) A person who implements an approved ERAP to tier 2 must

(a) provide technical or emergency response advice as soon as possible after a request for the advice;

(b) monitor the response to the release or anticipated release; and

(c) send ERAP emergency response resources to the location of the release or anticipated release.

Non-interference with ERAP implementation

(4) A person must not prevent another person who has an approved ERAP from taking emergency measures in response to a release or anticipated release.

7.9 Compensation for the Authorized Implementation of an Approved ERAP

Authorized expenses for compensation

(1) If a person implements an approved ERAP in accordance with paragraph 7.1(b) of the Act, the following expenses are authorized for the purposes of compensation under section 7.2 of the Act:

(a) expenses related to the death, disability or injury of the person or to the death, disability or injury of any of the person's employees or contractors if

(i) the person, the employee or the contractor is killed, disabled or injured during the implementation of the ERAP, and

(ii) the death, disability or injury is the result of an act or omission that was committed by the person in good faith and without negligence;

(b) the cost of the person's employees or contractors who are reasonably required to implement the ERAP;

(c) the cost of using the person's tools and other equipment, such as vehicles, pumps, hoses and generators, that are reasonably required to implement the ERAP;

(d) travel expenses, such as those incurred for meals, accommodation, fuel, oil and flights, for persons who are reasonably required to implement the ERAP;

(e) rental fees for heavy equipment, such as cranes, bulldozers, pumps, compressors and generators, that are reasonably required to implement the ERAP;

(f) other overhead costs that can reasonably be attributed to the implementation of the ERAP;

(g) the cost of repairing tools and other equipment that are damaged during the implementation of the ERAP;

(h) the cost of replacing

(i) single-use equipment and supplies, such as packaging, personal protective equipment, personal protective clothing, chemicals and other consumables, that are reasonably required to implement the ERAP,

(ii) tools and other equipment that are lost during the implementation of the ERAP, and

(iii) tools and other equipment that are damaged beyond repair during the implementation of the ERAP;

(i) the cost of repairing or replacing personal property or movables or real property or immovables that have to be damaged to implement the ERAP;

(j) the cost of defending any legal action for which there is no personal liability under paragraph 20(c) of the Act; and

(k) the cost of cleaning up after an incident, including handling and disposal costs for dangerous goods and contaminated materials.

Non-authorized expenses for compensation

(2) The following expenses are not authorized for the purposes of compensation under section 7.2 of the Act:

(a) the cost of purchasing new equipment to implement the approved ERAP; and

(b) the cost of lost business or production during the implementation of the approved ERAP.

7.10 Compensation Limits

Calculation of compensation

(1) Compensation under paragraph 7.9(1)(a) is limited to the compensation that would be paid in relation to the dead, disabled or injured person if the person were insured under

(a) the Public Service Management Insurance Plan;

(b) the Public Service Health Care Plan, with hospital coverage at Level III; and

(c) the Public Service Dental Care Plan.

Compensation limit based on equivalent item

(2) Compensation under paragraph 7.9(1)(h) in relation to the replacement of the items listed in subparagraphs 7.9(1)(h)(i), (ii) and (iii) is limited to the cost of an item of equivalent capability and quality.

Compensation limit based on market value

(3) Compensation under paragraph 7.9(1)(i) in relation to damaged property is limited to the fair market value of the property immediately before it is damaged by the person who implements the approved ERAP.

7.11 Claims for Compensation

Submission of claim for compensation

Claims for compensation must be submitted with supporting documentation to the Minister no later than three months after completion of the emergency response work.

Notes

PART 8
Reporting Requirements

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PART 8
Reporting Requirements

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases):

aircraft
CANUTEC
certification safety mark
class
classification
consignor
dangerous goods
Director General
emergency
ERAP
employer
infectious substance
means of containment
person
railway vehicle
release
road vehicle
shipping name
UN number
vessel

8.1 Application and Interpretation

Situations that must be reported

This Part applies in respect of

(a) the release or anticipated release of dangerous goods that are being offered for transport, handled or transported by road vehicle, railway vehicle or vessel;

(b) the release or anticipated release of dangerous goods that are being offered for transport, handled or transported by aircraft;

(c) undeclared and misdeclared dangerous goods that are being offered for transport, handled or transported by aircraft;

(d) the loss or theft of dangerous goods; and

(e) unlawful interference with dangerous goods.

Road, Rail and Marine Reports

8.2 Emergency Report – Road, Rail or Marine

Report to local authorities

A person who is required by subsection 18(1) of the Act to report a release or anticipated release of dangerous goods that are being offered for transport, handled or transported by road vehicle, railway vehicle or vessel must, as soon as possible after a release or anticipated release, make an emergency report to any local authority that is responsible for responding to emergencies at the geographic location of the release or anticipated release if the dangerous goods are, or could be, in excess of the quantity set out in the following table:

TABLE

Quantities that must be reported

Class	Packing Group or Category	Quantity
1	II	Any quantity
2	Not applicable	Any quantity
3, 4, 5, 6.1 or 8	I or II	Any quantity
3, 4, 5, 6.1 or 8	III, or without packing group	30 L or 30 kg
6.2	A or B	Any quantity
7	Not applicable	A level of ionizing radiation greater than the level established in section 39 of the "Packaging and Transport of Nuclear Substances Regulations, 2015"
9	II or III, or without packing group	30 L or 30 kg

8.3 Information to be Included in an Emergency Report – Road, Rail or Marine

Content of report to local authorities

An emergency report referred to in section 8.2 must include the following information:

(a) the name and contact information of the person making the report;

(b) in the case of a release of dangerous goods, the date, time and geographic location of the release;

(c) in the case of an anticipated release of dangerous goods, the date, time and geographic location of the incident that led to the anticipated release;

(d) the mode of transport used;

(e) the shipping name or UN number of the dangerous goods;

(f) the quantity of dangerous goods that was in the means of containment before the release or anticipated release;

(g) in the case of a release of dangerous goods, the quantity of dangerous goods estimated to have been released; and

(h) if applicable, the type of incident leading to the release or anticipated release, including a collision, roll-over, derailment, overfill, fire, explosion or load-shift.

8.4 Release or Anticipated Release Report – Road, Rail or Marine

Report to other parties

(1) Subject to subsection (2), a person who has made an emergency report referred to in section 8.2 must, as soon as possible after making it, make a report to the persons listed in subsection (4).

(2) Subject to subsection (3), the person is not required to make a report referred to in subsection (1) if the release or anticipated release did not result in

- **(a)** the death of a person;
- **(b)** a person sustaining injuries that required immediate medical treatment by a health care provider;
- **(c)** an evacuation of people or their shelter in place; or
- **(d)** the closure of
  - **(i)** a facility used in the loading and unloading of dangerous goods, or
  - **(ii)** a road, a main railway line or a main waterway.

(3) The person is required to make a report referred to in subsection (1) if

- **(a)** a means of containment has been damaged to the extent that its integrity is compromised; or
- **(b)** the centre sill or stub sill of a tank car is broken or there is a crack in the metal equal to or greater than 15 cm (6 in.).

(4) For the purposes of subsection (1), the persons to whom a report must be made are

- **(a)** CANUTEC, at 1-888-CANUTEC (1-888-226-8832) or 613-996-6666;
- **(b)** the consignor of the dangerous goods;
- **(c)** in the case of dangerous goods included in Class 7, Radioactive Materials, the Canadian Nuclear Safety Commission; and
- **(d)** in the case of a vessel, a Vessel Traffic Services Centre or a Canadian Coast Guard radio station.

8.5 Information to be Included in a Release or Anticipated Release Report – Road, Rail or Marine

Content of report to other parties

A release or anticipated release report referred to in section 8.4 must include the following information:

- **(a)** the name and contact information of the person making the report;
- **(b)** in the case of a release of dangerous goods, the date, time and geographic location of the release;
- **(c)** in the case of an anticipated release of dangerous goods, the date, time and geographic location of the incident that led to the anticipated release;
- **(d)** the mode of transport used;
- **(e)** the shipping name or UN number of the dangerous goods;
- **(f)** the quantity of dangerous goods that was in the means of containment before the release or anticipated release;
- **(g)** in the case of a release of dangerous goods, the quantity of dangerous goods estimated to have been released;
- **(h)** if applicable, the type of incident leading to the release or anticipated release, including a collision, rollover, derailment, overfill, fire, explosion or load-shift;
- **(i)** if applicable, the name and geographic location of any road, main railway line or main waterway that was closed;
- **(j)** a description of the means of containment containing the dangerous goods;
- **(k)** if applicable, an estimate of the number of people evacuated or sheltered in place; and
- **(l)** if applicable, the number of deaths and the number of persons who sustained injuries that required immediate medical treatment by a health care provider.

8.6 30-Day Follow-up Report

Report to Minister

A person who has made a report referred to in section 8.4, or the person's employer, must make a follow-up report in writing to the Minister within 30 days after the day on which the report was made.

8.7 Information to be Included in a 30-Day Follow-up Report

Content of report to Minister

A follow-up report referred to in section 8.6 must include the following information:

(a) the name and contact information of the person making the report;

(b) the names and contact information of the consignor, consignee and carrier;

(c) in the case of a release of dangerous goods, the date, time and geographic location of the release;

(d) in the case of an anticipated release of dangerous goods, the date, time and geographic location of the incident that led to the anticipated release;

(e) the mode of transport used;

(f) the classification of the dangerous goods;

(g) the quantity of dangerous goods that was in the means of containment before the release or anticipated release;

(h) in the case of a release of dangerous goods, the quantity of dangerous goods estimated to have been released;

(i) a description of the means of containment containing the dangerous goods;

(j) if applicable, a description of any failure of or damage to the means of containment;

(k) information about the events leading to the release or anticipated release of dangerous goods;

(l) information as to whether there was an explosion or fire;

(m) the name and geographic location of any facility used in the loading or unloading of the dangerous goods that was closed, and the duration of the closure;

(n) the name and geographic location of any road, main railway line or main waterway that was closed, and the duration of the closure;

(o) if applicable, an estimate of the number of people evacuated or sheltered in place and the duration of the evacuation or shelter in place;

(p) if applicable, the number of deaths and the number of persons who sustained injuries that required immediate medical treatment by a health care provider;

(q) the ERAP reference number, if applicable, and

- **(i)** the name of the person who was required to have the ERAP under subsection 7(1) of the Act, and
- **(ii)** the date and time that the ERAP incident report referred to in section 8.20 was made;

(r) the date on which the report referred to in section 8.4 was made; and

(s) an estimate of any financial loss incurred as a result of the release or anticipated release, and any emergency response cost or remediation costs related to it.

8.8 30-Day Follow-up Report – Notice and Retention of Report

Revision and retention of report to Minister

(1) A person who has made a follow-up report referred to in section 8.6 must, as soon as possible, notify the Minister of any change to the information referred to in paragraph 8.7(f), (i), (j), (k), (l), (p) or (s) that occurs within one year after the day on which the follow-up report was made.

(2) The person must keep a copy of the report for two years after the day on which it is made.

(3) The person must make the report available to an inspector within 15 days after the day on which the person receives a written request from the inspector.

Air Reports

8.9 Dangerous Goods Accident or Incident Report – Air

Situations that must be reported

(1) Subject to subsection (3), a person who is required by subsection 18(1) of the Act to report a release or anticipated release of dangerous goods that are being offered for transport, handled or transported at an aerodrome, at an air cargo facility or by aircraft must as soon as possible after a release or anticipated release, make a report if the dangerous goods are, or could be, in excess of the quantity set out in the following table:

Quantities that must be reported

Class	Quantity
1, 2, 3, 4, 5, 6, 8 or 9	Any quantity
7	A level of ionizing radiation greater than the level established in section 39 of the "Packaging and Transport of Nuclear Substances Regulations, 2015"

Report to CANUTEC (and CNSC for Class 7)

(2) The report referred to in subsection (1) must be made to CANUTEC, at 1-888-CANUTEC (1-888-226-8832) or 613-996-6666, and, in the case of dangerous goods included in Class 7, Radioactive Materials, to the Canadian Nuclear Safety Commission.

Situations that do not have to be reported

(3) The person is not required to make the report referred to in subsection (1) if the release or anticipated release does not result in any of the following:

- **(a)** the death or injury of a person;
- **(b)** damage to property or to the environment;
- **(c)** signs that the integrity of a means of containment has been compromised, including signs of fire, of breakage or of fluid or radiation leakage;
- **(d)** serious jeopardy to persons on an aircraft or to the aircraft itself;
- **(e)** an evacuation of people or their shelter in place; or
- **(f)** the closure of an aerodrome, air cargo facility or runway.

8.10 Information to be Included in a Dangerous Goods Accident or Incident Report – Air

Content of report

A report referred to in section 8.9 must include the following information:

- **(a)** the name and contact information of the person making the report;
- **(b)** in the case of a release of dangerous goods, the date, time and geographic location of the release;
- **(c)** in the case of an anticipated release of dangerous goods, the date, time and geographic location of the incident that led to the anticipated release;
- **(d)** the name of the aircraft operator, aerodrome or air cargo facility;
- **(e)** the shipping name or UN number of the dangerous goods;
- **(f)** the quantity of dangerous goods that was in the means of containment before the release or anticipated release;
- **(g)** in the case of a release of dangerous goods, the quantity of dangerous goods estimated to have been released;
- **(h)** if applicable, the type of incident leading to the release or anticipated release;
- **(i)** a description of the means of containment containing the dangerous goods;
- **(j)** if applicable, the number of deaths and the number of persons who sustained injuries; and
- **(k)** if applicable, an estimate of the number of people evacuated or sheltered in place.

8.11 30-Day Follow-up Report

Report to Minister

A person who has made a report referred to in section 8.9, or the person's employer, must make a follow-up report in writing to the Minister within 30 days after the day on which the report was made.

8.12 Information to be Included in a 30-Day Follow-up Report

Content of report to Minister

A follow-up report referred to in section 8.11 must include the following information:

(a) the name and contact information of the person making the report;

(b) the names and contact information of the consignor, consignee and aircraft operator;

(c) in the case of a release of dangerous goods, the date, time and geographic location of the release;

(d) in the case of an anticipated release of dangerous goods, the date, time and geographic location of the incident that led to the anticipated release;

(e) the classification of the dangerous goods;

(f) the quantity of dangerous goods that was in the means of containment before the release or anticipated release;

(g) in the case of a release of dangerous goods, the quantity of dangerous goods estimated to have been released;

(h) a description of the means of containment containing the dangerous goods;

(i) if applicable, a description of any failure of or damage to the means of containment;

(j) information about the events leading to the release or anticipated release of dangerous goods;

(k) information as to whether there was an explosion or fire;

(l) the name and geographic location of any aerodrome, air cargo facility or runway that was closed, and the duration of the closure;

(m) if applicable, an estimate of the number of people evacuated or sheltered in place, and the duration of the evacuation or shelter in place;

(n) if applicable, the number of deaths and the number of persons who sustained injuries;

(o) if applicable, the ERAP reference number;

(p) the date on which the report referred to in section 8.9 was made;

(q) an estimate of any financial loss incurred as a result of the release or anticipated release, and any emergency response costs or remediation costs related to it;

(r) a description of the route by which the dangerous goods were to be transported, including the names of any aerodromes along the route;

(s) a description of any serious jeopardy to persons on any aircraft or to the aircraft itself; and

(t) a description of any damage to property or to the environment.

8.13 30-Day Follow-up Report – Notice and Retention of Report

Revision and retention of report to Minister

(1) A person who has made a follow-up report referred to in section 8.11 must, as soon as possible, notify the Minister of any change to the information referred to in paragraph 8.12(e), (h), (i), (k), (n) or (q) that occurs within one year after the day on which the follow-up report was made.

(2) The person must keep a copy of the report for two years after the day on which it is made.

(3) The person must make the report available to an inspector within 15 days after the day on which the person receives a written request from the inspector.

8.14 Undeclared or Misdeclared Dangerous Goods Report

Report of error in documentation or marks to CANUTEC

A person must make a report to CANUTEC, at 1-888-CANUTEC (1-888-226-8832) or 613-996-6666, as soon as possible after discovering, at an aerodrome or air cargo facility or on board an aircraft, dangerous goods that are not accompanied by the documentation or dangerous goods marks set out for the dangerous goods in Parts 1 to 6 and 8 of the ICAO Technical Instructions.

8.15 Information to be Included in an Undeclared or Misdeclared Dangerous Goods Report

Content of report to CANUTEC

A report referred to in section 8.14 must include the following information:

- **(a)** the name and contact information of the person making the report;
- **(b)** the name of the aircraft operator, aerodrome or air cargo facility;
- **(c)** the names and contact information of the consignor and consignee;
- **(d)** the date of the discovery of the dangerous goods;
- **(e)** the shipping name or UN number of the dangerous goods;
- **(f)** a description of the means of containment containing the dangerous goods;
- **(g)** the gross mass or capacity of the means of containment and, if applicable, the total number of means of containment; and
- **(h)** a description of the route by which the dangerous goods were to be transported, including the names of any aerodromes along the route.

8.15.1 Dangerous Goods Occurrence Report (ICAO)

ICAO report to Minister

A person must make a dangerous goods occurrence report (ICAO) to the Minister within seven days after discovering, at an aerodrome or air cargo facility or on board an aircraft, dangerous goods that have been transported on board an aircraft without

- **(a)** being loaded, segregated or secured in accordance with Chapter 2 of Part 7 of the ICAO Technical Instructions; or
- **(b)** the pilot-in-command having been informed in accordance with section 7;4.1 of the ICAO Technical Instructions.

8.15.2 Information to be Included in a Dangerous Goods Occurrence Report (ICAO)

Content of ICAO report to Minister

A dangerous goods occurrence report (ICAO) referred to in section 8.15.1 must be in writing and include the following information:

- **(a)** the name and contact information of the person making the report;
- **(b)** the name of the aircraft operator, aerodrome or air cargo facility;
- **(c)** the names and contact information of the consignor and consignee;
- **(d)** the date of the discovery of the occurrence referred to in paragraph 8.15.1(a) or (b);
- **(e)** the shipping name or UN number of the dangerous goods;
- **(f)** a description of the means of containment containing the dangerous goods;
- **(g)** the gross mass or capacity of the means of containment and, if applicable, the total number of means of containment;
- **(h)** a description of the route by which the dangerous goods were, or were to be, transported, including the names of any aerodromes along the route; and
- **(i)** a detailed description of the circumstances that led to the discovery of the occurrence referred to in paragraph 8.15.1(a) or (b), as the case may be.

Security Reports

8.16 Loss or Theft Report

Losses or thefts that must be reported

(1) A person who is required by subsection 18(3) of the Act to report the loss or theft of dangerous goods must, as soon as possible after the loss or theft, report it by telephone to the persons listed in subsection (3) if the lost or stolen dangerous goods are in excess of the quantity set out in subsection (2).

Quantities that must be reported

(2) For the purposes of subsection (1), the quantities of dangerous goods are

(a) any quantity, in the case of the following dangerous goods:

(i) UN1261, NITROMETHANE,

(ii) UN1357, UREA NITRATE, WETTED, with not less than 20% water, by mass,

(iii) UN1485, POTASSIUM CHLORATE,

(iv) UN1486, POTASSIUM NITRATE,

(v) UN1487, POTASSIUM NITRATE AND SODIUM NITRITE MIXTURE,

(vi) UN1489, POTASSIUM PERCHLORATE,

(vii) UN1495, SODIUM CHLORATE,

(viii) UN1498, SODIUM NITRATE,

(ix) UN1499, SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE,

(x) UN1511, UREA HYDROGEN PEROXIDE,

(xi) UN1796, NITRATING ACID MIXTURE with more than 50% nitric acid,

(xii) UN1826, NITRATING ACID MIXTURE, SPENT, with more than 50% nitric acid,

(xiii) UN1942, AMMONIUM NITRATE with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance,

(xiv) UN2014, HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary),

(xv) UN2015, HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABILIZED with more than 60% hydrogen peroxide, or HYDROGEN PEROXIDE, STABILIZED,

(xvi) UN2031, NITRIC ACID, other than red fuming,

(xvii) UN2032, NITRIC ACID, RED FUMING,

(xviii) UN3149, HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE with acid(s), water and not more than 5% peroxyacetic acid, STABILIZED, and

(xix) UN3370, UREA NITRATE, WETTED, with not less than 10% water by mass;

(b) any quantity, in the case of dangerous goods in the following primary and subsidiary classes:

(i) explosives included in Class 1.1, 1.2 or 1.3,

(ii) toxic gases included in Class 2.3,

(iii) organic peroxides included in Class 5.2, Type B, liquid or solid, temperature controlled,

(iv) toxic substances included in Class 6.1 and Packing Group I,

(v) infectious substances included in Class 6.2, and

(vi) radioactive materials included in Class 7; and

(c) a total quantity of 450 kg or more, in the case of dangerous goods in the following primary and subsidiary classes:

(i) explosives included in Class 1.4 (except for 1.4S), 1.5 or 1.6,

(ii) flammable gases included in Class 2.1,

(iii) flammable liquids included in Class 3,

(iv) desensitized explosives included in Class 3 or 4.1,

(v) substances liable to spontaneous combustion, pyrophoric solids or liquids, included in Class 4.2 and Packing Group I or II,

(vi) water-reactive substances included in Class 4.3 and Packing Group I or II,

(vii) oxidizing substances included in Class 5.1 and Packing Group I or II, and

(viii) corrosives included in Class 8 and Packing Group I or II.

Report loss or theft to CANUTEC, NRC, CNSC, as applicable

(3) For the purposes of subsection (1), the persons to whom the report must be made are

(a) CANUTEC, at 1-888-CANUTEC (1-888-226-8832) or 613-996-6666;

(b) in the case of dangerous goods included in Class 1, Explosives, or referred to in paragraph (2)(a) or subparagraph (2)(b)(i) or (c)(i), a Natural Resources Canada inspector, at 613-995-5555; and

(c) in the case of dangerous goods included in Class 7, Radioactive Materials, the Canadian Nuclear Safety Commission.

Report if lost or stolen goods are found

(4) A person who made the report referred to in subsection (1) must notify the persons referred to in subsection (3) if that person finds the dangerous goods that were lost or stolen.

8.17 Information to be Included in a Loss or Theft Report

Content of loss or theft report

A loss or theft report referred to in section 8.16 must include the following information:

(a) the name and contact information of the person making the report;

(b) the names and contact information of the consignor, the consignee and the carrier;

(c) information as to whether the dangerous goods were lost or stolen;

(d) the shipping name or UN number of the lost or stolen dangerous goods;

(e) the quantity of the lost or stolen dangerous goods;

(f) a description of the means of containment containing the lost or stolen dangerous goods; and

(g) the approximate date, time and geographic location of the loss or theft.

8.18 Unlawful Interference Report

Report unlawful interference to CANUTEC, NRC, CNSC, as applicable

(1) If there has been unlawful interference with dangerous goods while they were being imported, offered for transport, handled or transported, the person who had the charge, management or control of the goods must, as soon as possible after the discovery of the unlawful interference, report it by telephone to the persons listed in subsection (2).

(2) For the purposes of subsection (1), the persons to whom the unlawful interference must be reported are

(a) CANUTEC, at 1-888-CANUTEC (1-888-226-8832) or 613-996-6666;

(b) in the case of dangerous goods included in Class 1, Explosives, or referred to in paragraph 8.16(2)(a) or subparagraph 8.16(2)(b)(i) or (c)(i), a Natural Resources Canada inspector, at 613-995-5555; and

(c) in the case of dangerous goods included in Class 7, Radioactive Materials, the Canadian Nuclear Safety Commission.

8.19 Information to be Included in an Unlawful Interference Report

Content of unlawful interference report

A report referred to in section 8.18 must include the following information:

(a) the name and contact information of the person making the report;

(b) the names and contact information of the consignor, the consignee and the carrier;

(c) a detailed description of the unlawful interference;

(d) the shipping name or UN number of the dangerous goods;

(e) a description of the means of containment containing the dangerous goods, and the number of means of containment; and

(f) the approximate date, time and geographic location of the unlawful interference.

ERAP Reports

8.20 ERAP Incident Report

Requirement to report ERAP incident

A person who is required under subsection 18(1) of the Act to report a release or anticipated release of dangerous goods in respect of which an approved ERAP is required under subsection 7(1) of the Act must, as soon as possible after the release or anticipated release, make an ERAP incident report by telephone to the person at the ERAP telephone number required to be included on the shipping document under paragraph 3.6(1)(b), if the dangerous goods are, or could be, in excess of the quantity set out in the following table:

Class	Quantity
1, 2, 3, 4, 5, 6 or 8	Any quantity
7	A level of ionizing radiation greater than the level established in section 39 of the "Packaging and Transport of Nuclear Substances Regulations, 2015"

8.21 Information to be Included in an ERAP Incident Report

Content of incident report

An ERAP incident report referred to in section 8.20 must include the following information:

(a) the name and contact information of the person making the report;

(b) the ERAP reference number;

(c) in the case of a release of dangerous goods, the date, time and geographic location of the release;

(d) in the case of an anticipated release of dangerous goods, the date, time and geographic location of the incident that led to the anticipated release;

(e) the mode of transport used;

(f) the shipping name or UN number of the dangerous goods;

(g) the quantity of dangerous goods that was in the means of containment before the release or anticipated release;

(h) in the case of a release, the quantity of dangerous goods estimated to have been released;

(i) a description of the means of containment containing the dangerous goods;

(j) an indication of whether a means of containment has been damaged to the extent that its integrity could be compromised;

(k) an indication of whether a transfer of the dangerous goods to another means of containment is anticipated or required; and

(l) if applicable, the type of incident leading to the release or anticipated release, including a collision, rollover, derailment, overfill, fire, explosion or load-shift.

8.22 ERAP Implementation Report

Report to CANUTEC

Each time a person implements an approved ERAP to tier 1 or tier 2, the person must, as soon as possible, make an ERAP implementation report to CANUTEC, at 1-888-CANUTEC (1-888-226-8832) or 613-996-6666.

8.23 Information to Be Included in an ERAP Implementation Report

Content of report to CANUTEC

An ERAP implementation report referred to in section 8.22 must include the following information:

(a) the name and contact information of the person making the report;

(b) the ERAP reference number;

(c) if applicable, the person authorized under subsection 7.7(1) to use the ERAP;

(d) whether the ERAP was implemented to tier 1 or 2;

(e) the date and time that the ERAP was implemented to tier 1 or 2;

(f) the shipping name or UN number of the dangerous goods in relation to which the ERAP was implemented; and

(g) the measures taken to respond to the release or anticipated release.

PART 9
Road

Table of Contents

PART 9
Road

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:

aircraft
carrier
49 CFR
classification
consignment
consignor
dangerous goods
dangerous goods safety mark
ERAP
handling
ICAO Technical Instructions
IMDG Code
large means of containment
means of containment
person
road vehicle
shipping document
shipping name
UN Recommendations
vessel

According to the definition of "import", when dangerous goods being imported are being transported to a place in Canada, the person who imports the dangerous goods is the consignor. If the dangerous goods are being transported through Canada, each person who transports them in Canada (that is, each carrier) is the consignor while in possession of the dangerous goods.

9.1 Transporting Dangerous Goods from the United States into or through Canada

Consignments of dangerous goods that originate in the United States are subject to expert inspection by U.S. inspectors. These consignments can be transported in Canada under the requirements of 49 CFR. However, consignments that originate in Canada are not permitted under these Regulations to be transported in Canada under 49 CFR only, because these consignments are not subject to expert inspection by U.S. inspectors.

49 CFR equivalency

(1) Despite the requirements in Part 2, Classification, Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, a person may handle or transport dangerous goods by road vehicle from a place in the United States to a place in Canada or from a place in the United States through Canada to a place outside Canada in accordance with the classification, marking, labelling, placarding and documentation requirements of 49 CFR, if

Information on shipping document

(a) the information required on the shipping document is easy to identify, legible, in indelible print, in English or French and includes

- consignor

(i) when dangerous goods are transported to a place in Canada, the name and address of the place of business in Canada of the consignor,

The consignor in this case is the consignee in Canada.

- carrier as consignor

(ii) when dangerous goods are transported from a place in the United States through Canada to a place outside Canada, the name and the address of the place of business of each consignor, except that in this case the name and address may be shown on a separate document attached to the shipping document and is required only while that person is the consignor,

The consignor in this case is the carrier.

- dangerous goods assigned letter "D" in 49 CFR

(iii) the classification in Schedule 1 or in the UN Recommendations, for dangerous goods that have the letter "D" assigned to them in column 1 of the table to section 172.101 of 49 CFR, except for dangerous goods with the shipping name "Consumer commodity", and

- ERAP information

(iv) if applicable, the information relating to the approved ERAP referred to in subsection 3.6(1);

Documentation requirements

(b) the person complies with the following sections in Part 3, Documentation:

(i) section 3.2, Carrier Responsibilities,

(ii) section 3.7, Location of a Shipping Document: Road, and

(iii) section 3.10, Location of a Shipping Document: Storage in the Course of Transportation; and

Labels and placards for 2.3 and 6.1

(c) on or after August 31, 2008, the labels and placards displayed for dangerous goods included in Class 2.3 or Class 6.1 are the labels and placards required in these Regulations for the dangerous goods. The labels and placards may be displayed before August 31, 2008.

Dangerous goods that are forbidden or that are transported under 49 CFR conditions

(2) Subsection (1) does not apply to dangerous goods that

(a) are forbidden for transport by these Regulations;

(b) are not regulated by 49 CFR but are regulated by these Regulations; or

(c) *Repealed*

(d) are given dangerous goods safety mark or packaging exceptions in 49 CFR that are not permitted by these Regulations.

49 CFR exemption valid in Canada

(3) A person who handles or transports dangerous goods by road vehicle in accordance with an exemption issued under Subpart B of Part 107 of 49 CFR may do so from a place in the United States to a place in Canada or from a place in the United States through Canada to a place outside Canada if the exemption number appears on the shipping document.

Resolution of conflict between 49 CFR exemption and Canadian regulations

(4) If there is a conflict between the requirements of Part 2 (Classification), Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks) or Part 5 (Means of Containment) and an exemption referred to in subsection (3), the exemption prevails to the extent of the conflict.

9.2 Transporting Dangerous Goods to or from an Aircraft, an Aerodrome or an Air Cargo Facility

Consignment by road and air

(1) Despite the requirements in Part 2, Classification, Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, if transport has been or is to be by aircraft, a person may handle or transport dangerous goods by road vehicle to or from an aircraft, an aerodrome or an air cargo facility in accordance with the classification, marking, labelling, and documentation requirements of the ICAO Technical Instructions, if

(a) the information required on the shipping document is easy to identify, legible, in indelible print, in English or French and includes, if applicable, the information relating to the approved ERAP referred to in subsection 3.6(1); and

(b) the person complies with the following provisions in Part 3, Documentation:

(i) section 3.2, Carrier Responsibilities,

(ii) paragraph 3.5 (1)(f) and subsection 3.5 (2), concerning a 24-hour number on a shipping document,

(iii) section 3.7, Location of a Shipping Document: Road, and

(iv) section 3.10, Location of a Shipping Document: Storage in the Course of Transportation.

(2) Subsection (1) does not apply if these Regulations forbid the transport of the dangerous goods or if the dangerous goods are not regulated by the ICAO Technical Instructions but are regulated by these Regulations.

(3) When dangerous goods are transported to or from an aircraft, an aerodrome or an air cargo facility, by a road vehicle, the road vehicle, or any means of containment visible from outside the road vehicle, must have placards displayed on it in accordance with Part 4, Dangerous Goods Safety Marks.

9.3 Transporting Dangerous Goods to or from a Vessel, a Port Facility or a Marine Terminal

Consignment by road and vessel

(1) Despite the requirements in Part 2, Classification, Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, if transport has been or is to be by vessel, a person may handle or transport by road vehicle an international consignment of dangerous goods to or from a vessel, a port facility or a marine terminal in accordance with the classification, marking, labelling, placarding and documentation requirements of the IMDG Code if

(a) the information required on the shipping document is easy to identify, legible, in indelible print, in English or French and includes, if applicable, the information relating to the approved ERAP referred to in subsection 3.6(1); and

(b) the person complies with the following provisions in Part 3, Documentation:

(i) section 3.2, Carrier Responsibilities,

(ii) paragraph 3.5 (1)(f) and subsection 3.5 (2), concerning a 24-hour number on a shipping document,

(iii) section 3.7, Location of a Shipping Document: Road, and

(iv) section 3.10, Location of a Shipping Document: Storage in the Course of Transportation.

(2) Subsection (1) does not apply if these Regulations forbid the transport of the dangerous goods or if the dangerous goods are not regulated by the IMDG Code but are regulated by these Regulations.

(3) When dangerous goods are transported in a large means of containment to or from a vessel, a port facility or a marine terminal, the large means of containment must have placards displayed on it in accordance with Part 4, Dangerous Goods Safety Marks, or the IMDG Code.

9.4 Reshipping in Canada

Reshipping within Canada - safety marks

(1) When a consignment of dangerous goods is transported from a place outside Canada to a place in Canada and is reshipped within Canada by road vehicle, the dangerous goods safety marks displayed in accordance with 49 CFR, the ICAO Technical Instructions or the IMDG Code at the time of entry into Canada may continue to be displayed, except that the large means of containment containing the dangerous goods must have placards displayed on it in accordance with Part 4, Dangerous Goods Safety Marks.

If the dangerous goods are not regulated in Canada, the placards are not required to be displayed on the large means of containment.

- shipping document

(2) The shipping document that accompanies the dangerous goods must include a notation that the dangerous goods safety marks are in accordance with 49 CFR, the ICAO Technical Instructions or the IMDG Code, if they differ from the ones required to be displayed by Part 4, Dangerous Goods Safety Marks.

9.5 Maximum Net Explosives Quantity in a Road Vehicle

Limit for explosives in a vehicle

The total net explosives quantity of all explosives that are transported together in a road vehicle must be less than or equal to the following limits:

(a) 25 kg if any of the explosives are UN0190, SAMPLES, EXPLOSIVE;

(b) 2,000 kg if any of the explosives are included in Class 1.1A; and

(c) 20,000 kg.

PART 10
Rail

Table of Contents

PART 10
Rail

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:

aircraft
carrier
49 CFR
class
classification
consignment
consignor
dangerous goods
dangerous goods safety mark
ERAP
handling
ICAO Technical Instructions
IMDG Code
large means of containment
means of containment
person
railway vehicle
shipping document
shipping name
train
UN Recommendation
vessel

According to the definition of "import", when dangerous goods being imported are being transported to a place in Canada, the person who imports the dangerous goods is the consignor. If the dangerous goods are being transported through Canada, each person who transports them in Canada (that is, each carrier) is the consignor while in possession of the dangerous goods.

10.1 Transporting Dangerous Goods from the United States into or through Canada

Consignments of dangerous goods that originate in the United States are subject to expert inspection by U.S. inspectors. These consignments can be transported in Canada under the requirements of 49 CFR. However, consignments that originate in Canada are not permitted under these Regulations to be transported in Canada under 49 CFR only, because these consignments are not subject to expert inspection by U.S. inspectors.

49 CFR equivalency

(1) Despite the requirements in Part 2, Classification, Part 3, Documentation and Part 4, Dangerous Goods Safety Marks, a person may handle or transport dangerous goods by railway vehicle from a place in the United States to a place in Canada or from a place in the United States through Canada to a place outside Canada in accordance with the classification, marking, labelling, placarding and documentation requirements of 49 CFR if

Information on shipping document

(a) the information required on the shipping document is easy to identify, legible, in indelible print, in English or French and includes

- consignor

(i) when dangerous goods are transported to a place in Canada, the name and address of the place of business in Canada of the consignor,

The consignor in this case is the consignee in Canada.

- carrier as consignor

(ii) when dangerous goods are transported from a place in the United States through Canada to a place outside Canada, the name and the address of the place of business of each consignor, except that in this case the name and address may be shown on a separate document attached to the shipping document and is required only while that person is the consignor,

The consignor in this case is the carrier.

- dangerous goods assigned letter "D" in 49 CFR

(iii) the classification in Schedule 1 or in the UN Recommendations, for dangerous goods that have the letter "D" assigned to them in column 1 of the table to section 172.101 of 49 CFR, except for dangerous goods with the shipping name "Consumer commodity", and

- ERAP information

(iv) if applicable, the information relating to the approved ERAP referred to in subsection 3.6(1);

Documentation requirements

(b) the person complies with the following sections in Part 3, Documentation:

(i) section 3.2, Carrier Responsibilities,

(ii) section 3.8, Location of a Shipping Document and Consist: Rail, and

(iii) section 3.10, Location of a Shipping Document: Storage in the Course of Transportation; and

Labels and placards for 2.3 and 6.1

(c) on or after August 31, 2008, the labels and placards displayed for dangerous goods included in Class 2.3 or 6.1 are the labels and placards required in these Regulations for the dangerous goods. The labels or placards may be displayed before August 31, 2008.

Dangerous goods that are forbidden or that are transported under 49 CFR conditions

(2) Subsection (1) does not apply to dangerous goods that

(a) are forbidden for transport by these Regulations;

(b) are not regulated by 49 CFR but are regulated by these Regulations; or

(c) *Repealed*

(d) are given dangerous goods safety mark or packaging exceptions in 49 CFR that are not permitted by these Regulations.

49 CFR exemption valid in Canada

(3) A person who handles or transports dangerous goods by railway vehicle in accordance with an exemption issued under Subpart B of Part 107 of 49 CFR may do so from a place in the United States to a place in Canada or from a place in the United States through Canada to a place outside Canada if the exemption number appears on the shipping document.

Resolution of conflict between 49 CFR exemption and Canadian regulations

(4) If there is a conflict between the requirements of Part 2 (Classification), Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks) or Part 5 (Means of Containment) and an exemption referred to in subsection (3), the exemption prevails to the extent of the conflict.

10.1.1 Railway Vehicle Reciprocity

Reciprocity

Despite the requirements of Part 5 (Means of Containment), a person may offer for transport, handle or transport dangerous goods by railway vehicle from a place in the United States to a place in Canada or from a place in the United States through Canada to a place outside Canada in accordance with the requirements of Parts 172, 173, 174, 179 and 180 of 49 CFR, except by tank car if the goods are Class 3, Flammable Liquids that are referred to in section 10.5.6 of TP 14877.

10.2 Transporting Dangerous Goods to or from an Aircraft, an Aerodrome or an Air Cargo Facility

Consignment by rail and air

(1) Despite the requirements in Part 2, Classification, Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, if transport has been or is to be by aircraft, a person may handle or transport dangerous goods by railway vehicle to or from an aircraft, an aerodrome or an air cargo facility in accordance with the classification, marking, labelling and documentation requirements of the ICAO Technical Instructions, if

- **(a)** the information required on the shipping document is easy to identify, legible, in indelible print, in English or French and includes, if applicable, the information relating to the approved ERAP referred to in subsection 3.6(1); and
- **(b)** the person complies with the following provisions in Part 3, Documentation:
  - **(i)** section 3.2, Carrier Responsibilities,
  - **(ii)** paragraph 3.5 (1)(f) and subsection 3.5 (2), concerning a 24-hour number on a shipping document,
  - **(iii)** section 3.8, Location of a Shipping Document and Consist: Rail, and
  - **(iv)** section 3.10, Location of a Shipping Document: Storage in the Course of Transportation.

(2) Subsection (1) does not apply if these Regulations forbid the transport of the dangerous goods or if the dangerous goods are not regulated by the ICAO Technical Instructions but are regulated by these Regulations.

(3) When dangerous goods are transported to or from an aircraft, an aerodrome or an air cargo facility, by railway vehicle, the railway vehicle, or any means of containment visible from outside the railway vehicle must have placards displayed on it in accordance with Part 4, Dangerous Goods Safety Marks.

10.3 Transporting Dangerous Goods to or from a Vessel, a Port Facility or a Marine Terminal

Consignment by rail and vessel

(1) Despite the requirements in Part 2, Classification, Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, if transport has been or is to be by vessel, a person may handle an international consignment of dangerous goods or transport it by railway vehicle to or from a vessel, a port facility or a marine terminal in accordance with the classification, marking, labelling, placarding and documentation requirements of the IMDG Code if

(a) the information required on the shipping document is easy to identify, legible, in indelible print, in English or French and includes, if applicable, the information relating to the approved ERAP referred to in subsection 3.6(1); and

(b) the person complies with the following provisions in Part 3, Documentation:

(i) section 3.2, Carrier Responsibilities,

(ii) paragraph 3.5 (1)(f) and subsection 3.5 (2), concerning a 24-hour number on a shipping document,

(iii) section 3.8, Location of a Shipping Document and Consist: Rail, and

(iv) section 3.10, Location of a Shipping Document: Storage in the Course of Transportation.

(2) Subsection (1) does not apply if these Regulations forbid the transport of the dangerous goods or if the dangerous goods are not regulated by the IMDG Code but are regulated by these Regulations.

(3) When dangerous goods are transported in a large means of containment to or from a vessel, a port facility or a marine terminal, the large means of containment must have placards displayed on it in accordance with Part 4, Dangerous Goods Safety Marks, or the IMDG Code.

10.4 Reshipping in Canada

Reshipping within Canada

- safety marks

(1) When a consignment of dangerous goods is transported from a place outside Canada to a place in Canada and is reshipped within Canada by railway vehicle, the dangerous goods safety marks displayed in accordance with 49 CFR, the ICAO Technical Instructions or the IMDG Code at the time of entry into Canada may continue to be displayed, except that the large means of containment containing the dangerous goods must have placards displayed on it in accordance with Part 4, Dangerous Goods Safety Marks.

If the dangerous goods are not regulated in Canada, the placards are not required to be displayed on the large means of containment.

- shipping document

(2) The shipping document that accompanies the dangerous goods must include a notation that the dangerous goods safety marks are in accordance with 49 CFR, the ICAO Technical Instructions or the IMDG Code, if they differ from the ones required to be displayed by Part 4, Dangerous Goods Safety Marks.

10.5 *Repealed*

10.6 Location of Placarded Railway Vehicle in a Train

Position in train

(1) Unless it is likely to have a serious impact on train dynamics, a person must not, in a train, locate a railway vehicle that contains dangerous goods described in column 1 of the table to this subsection for which a placard is required to be displayed in accordance with Part 4, Dangerous Goods Safety Marks, next to a railway vehicle described in the same row in column 2.

TABLE

Item	*Column 1* Dangerous Goods	*Column 2* Railway Vehicle
1	Any class of dangerous goods	**(a)** an operating engine or an engine tender unless all the railway vehicles in the train, other than engines, tenders and cabooses, have placards displayed on them; **(b)** an occupied railway vehicle unless all the other railway vehicles in the train, other than engines, tenders and cabooses, are occupied or have placards displayed on them; **(c)** a railway vehicle that has a continual source of ignition; or **(d)** any open railway vehicle, **(i)** when the lading protrudes beyond the railway vehicle and may shift during transport, or **(ii)** when the lading is higher than the top of the railway vehicle and may shift during transport.
2	Dangerous goods included in Class 1.1 or Class 1.2	Any railway vehicle that is required to have a placard displayed on it for Class 2, 3, 4 or 5.
3	UN1008, BORON TRIFLUORIDE COMPRESSED UN1026, CYANOGEN UN1051, HYDROGEN CYANIDE, STABILIZED UN1067, DINITROGEN TETROXIDE or NITROGEN DIOXIDE UN1076, PHOSGENE UN1589, CYANOGEN CHLORIDE, STABILIZED UN1614, HYDROGEN CYANIDE, STABILIZED UN1660, NITRIC OXIDE, COMPRESSED UN1911, DIBORANE, COMPRESSED UN1975, NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURE or NITRIC OXIDE AND NITROGEN DIOXIDE MIXTURE UN2188, ARSINE UN2199, PHOSPHINE UN2204, CARBONYL SULPHIDE or CARBONYL SULFIDE UN3294, HYDROGEN CYANIDE, SOLUTION IN ALCOHOL	Any railway vehicle that is required to have a placard displayed on it for Class 1, 2, 3, 4 or 5 unless the railway vehicle next to it contains the same dangerous goods

(2) Dangerous goods that are being transported in railway vehicles in a train from the United States to Canada or from the United States through Canada to a place outside Canada may be located in the train in accordance with sections 174.84 and 174.85 of 49 CFR.

10.7 Coupling of Railway Vehicles

Coupling speed

(1) A person must not couple a railway vehicle with another railway vehicle at a relative coupling speed greater than 9.6 km/h (6 mph) if either of the railway vehicles that make contact on coupling contains dangerous goods for which a placard is required to be displayed in accordance with Part 4, Dangerous Goods Safety Marks.

Coupling speed based on temperature

(2) Despite subsection (1), a person may couple a single railway vehicle moving under its own momentum at a relative coupling speed less than or equal to 12 km/h (7.5 mph) when the ambient temperature is above -25°C.

Actions following a potentially dangerous coupling

(3) If a person couples a tank car that contains dangerous goods for which a placard is required to be displayed in accordance with Part 4, Dangerous Goods Safety Marks, with another railway vehicle and the three conditions in any one of the four rows set out in the table to this subsection apply, the person must

(a) visually inspect the underframe assembly and coupling and cushioning components of the tank car to ensure their integrity before the tank car is moved more than 2 km from the place where the coupling occurred; and

(b) report, in writing, to the owner of the tank car within 10 days after the coupling and include a copy of the text of this section and information about any damage that compromises the integrity of the underframe assembly or draft gear of the tank car discovered as a result of the inspection.

TABLE

Item	*Column 1* Combined Coupling Mass: Tank Car and Other Railway Vehicle, and their Contents, in Kilograms	*Column 2* Ambient Temperature: in Degrees Celsius	*Column 3* Relative Coupling Speed: in Kilometres per hour
1	> 150,000	≤ –25	> 9.6
2	> 150,000	> –25	> 12
3	≤ 150,000	≤ –25	> 12.9
4	≤ 150,000	> –25	> 15.3

Inspection of tank car

(4) The owner of a tank car who receives the report must not use the tank car or permit the tank car to be used to transport dangerous goods, other than the dangerous goods that were contained in the tank car at the time of the coupling, until the tank car undergoes

(a) a visual inspection and a structural integrity inspection in accordance with clause 9.5.6(a) and clause 9.5.7 of TP14877; and

(b) for a tank car equipped with a stub sill, a stub sill inspection covering at least the following areas:

(i) the termination of the stub sill reinforcement pad closest to the mid-point of the tank car and associated welds for a 30 cm length from that point back towards the other end of the pad,

(ii) all welds

(A) connecting the head brace to the stub sill,

(B) between the head brace and the head reinforcement pad, and

(C) between the tank and the head reinforcement pad and, if the head reinforcement pad is connected to the stub sill reinforcement pad, 2.5 cm past that connection towards the centre of the tank,

(iii) all metal of the stub sill assembly, other than welds, from the body bolster to the coupler, and

(iv) the draft gear pocket.

Cushioning device

(5) This section does not apply if either the tank car or the other railway vehicle that was coupled is equipped with a cushioning device designed for a displacement of 15 cm (6 in.) or more in compression and capable of limiting the maximum c oupler force to 4,448 kilonewtons (1,000,000 lbf) when impacted at 16.1 km/h (10 mph) by a railway vehicle having a gross mass of 99,790 kg (220,000 lb).

10.8 Reporting

Reports to Minister

A consignor shall, on reasonable notice given by the Minister, provide the Minister with the following information:

(a) the number of tank cars owned or leased by the consignor that meet the requirements of TP 14877 for TC117R tank cars;

(b) the number of tank cars owned or leased by the consignor that meet the requirements of TP 14877 for TC117P tank cars;

(c) the number of tank cars owned or leased by the consignor and used for importing, offering for transport or handling dangerous goods included in Class 3, Flammable Liquids, that meet the requirements of TP 14877 for Class 111 tank cars; and

(d) the number of tank cars owned or leased by the consignor and used for importing, offering for transport or handling dangerous goods included in Class 3, Flammable Liquids, that meet the requirements of TP 14877 for enhanced Class 111 tank cars.

Notes

PART 12
Air

Background

There are many air carriers who delegate to third parties some of the duties that are assigned to them in the ICAO Technical Instructions and in this Part.

There is nothing in these Regulations that hinders this practice but it should be noted by air carriers that delegating responsibility for certain duties does not include delegating liability for those duties. This means that if an air carrier contracts a third party to provide, for example, cargo handling, acceptance or loading activities, the approval programme for training mandated by the ICAO Technical Instructions and carried out by the Civil Aviation Directorate, Transport Canada, applies to those third party activities.

The ICAO Technical Instructions refers to the air carrier as the operator.

Definitions

Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:

aircraft
biological product
cargo aircraft
carrier
Category A
Category B
certification safety mark
49 CFR
class
classification
compatibility group
consignment
consignor
cylinder
dangerous goods
dangerous goods safety mark
ERAP
flash point
gas
gross mass
handling
ICAO Technical Instructions
IMDG Code
infectious substance
inspector
in standard
in transport
large means of containment
liquid
means of containment
means of transport
net explosives quantity
offer for transport
packing group
passenger
passenger carrying aircraft
permit for equivalent level of safety
person
prescribed
primary class
protective direction
public safety
release
safety mark
safety requirements
shipping document
shipping name
small means of containment
solid
special provision
standardized means of containment
substance
Supplement to the ICAO Technical Instructions
technical name
UN number
UN standardized means of containment
vapour

International and Domestic Transport by Aircraft

12.1 General Requirements

ICAO Technical Instructions

(1) A person who handles, offers for transport or transports dangerous goods by aircraft between Canada and another country must do so in accordance with the ICAO Technical Instructions and the following provisions of these Regulations:

Part 1 provisions

(a) in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases,

- **(i)** section 1.7, Safety Requirements, Documents, Safety Marks,
- **(ii)** paragraphs 1.8(a) and (b), Prohibition: Explosives,
- **(iii)** *Repealed*
- **(iv)** section 1.12, Evidence: Safety Marks, Prescribed Documents,
- **(v)** section 1.13, Defence: Due Diligence,
- **(vi)** *Repealed*
- **(vii)** section 1.20, National Defence, and
- **(viii)** section 1.43, Class 7, Radioactive Materials;

Classification

(b) in Part 2, Classification,

- **(i)** section 2.2, Responsibility for Classification,
- **(ii)** section 2.36, Infectious Substances,
- **(iii)** section 2.37, General, Class 7, Radioactive Materials, and
- **(iv)** subparagraphs 2.43(b)(iv) and (v), concerning classifying in Class 9 dangerous goods that are environmentally hazardous substances;

Documentation

(c) in Part 3, Documentation,

- **(i)** section 3.1, Consignor Responsibilities,
- **(ii)** subsections 3.2(1), (2), (3), (5) and (6), Carrier Responsibilities,
- **(iii)** subsection 3.4(1), Legibility and Language,
- **(iv)** paragraph 3.5(1)(f) and subsection 3.5(2), concerning a 24-hour number on a shipping document,
- **(v)** subsections 3.6(1) and (2), which require the ERAP reference number and telephone number on a shipping document, and
- **(vi)** section 3.11, Keeping Shipping Document Information;

Safety marks

(d) in Part 4, Dangerous Goods Safety Marks,

- **(i)** section 4.2, Misleading Dangerous Goods Safety Marks,
- **(ii)** section 4.4, Consignor Responsibilities,
- **(iii)** subsection 4.5(1), Carrier Responsibilities,
- **(iv)** subsection 4.7(1), Labels and Placards: Size and Orientation, and
- **(v)** section 4.9, Removal of Dangerous Goods Safety Marks;

SCHEDULE 1

Dangerous Goods List – By UN Number

Classes 1 to 9

Legend

Col. 1 **UN Number.** This column gives the UN numbers for the shipping names of the dangerous goods. The shipping names are listed in alphabetical order in Schedule 3.

Col. 2 **Shipping Name and Description.** This column gives the shipping names for the dangerous goods. Each shipping name is written in upper case letters (capitals) and any descriptive text is written in lower case letters. The word "or" between shipping names indicates that there is more than one shipping name for the dangerous goods and that each shipping name is correct. Any one of the shipping names may be used, for example, to complete a shipping document.

See paragraph 1.3(2)(d) of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) for additional information about shipping names and how they may be written to complete, for example, a shipping document.

The abbreviation N.O.S. means "Not Otherwise Specified".

Col. 3 **Class.** This column gives the primary class for the dangerous goods. Any subsidiary class is shown in parentheses. There is no priority between or among subsidiary classes.

The word "Forbidden" in this column means that the dangerous goods must not be transported. Schedule 3 includes dangerous goods that are forbidden for transport but that do not have a UN number. *A person may apply for a Permit for Equivalent Level of Safety to transport these dangerous goods (see Part 14 (Permit for Equivalent Level of Safety)).*

Col. 4 **Packing Group/Category.** This column gives the packing group or category for the dangerous goods.

All dangerous goods included in Class 1, Explosives, are assigned to packing group II. Dangerous goods included in Class 2, Gases, and Class 7, Radioactive Materials, do not have packing groups. Dangerous goods included in Class 6.2, Infectious Substances, are assigned to category A or B rather than to packing groups.

Col. 5 **Special Provisions.** This column gives the numbers of the special provisions that apply to the dangerous goods. The special provisions are set out in Schedule 2.

Col. 6a **Explosive Limit and Limited Quantity Index.** This column gives the maximum quantity of dangerous goods that may be handled, offered for transport or transported either in accordance with section 1.17 of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) in the case of dangerous goods included in any of Classes 2 to 9, or in accordance with section 1.31 of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) in the case of dangerous goods included in Class 1, Explosives.

Section 1.17 applies to dangerous goods included in Classes 2 to 9. Section 1.17 may also apply to ammunition included in Class 1.4S and assigned to UN0012, UN0014 or UN0055.

Section 1.31 applies to dangerous goods included in Class 1.

Ammunition included in Class 1.4S and assigned to UN0012, UN0014 or UN0055 may be offered for transport with the Limited Quantity marking under special provision 125 of Schedule 2.

Col. 6b **Excepted Quantity Index.** This column provides an alphanumeric code, set out in the table to subsection 1.17.1(2) of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases), that indicates the maximum quantity of dangerous goods that may be handled, offered for transport or transported in accordance with section 1.17.1 of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) in the case of dangerous goods included in any of Classes 2 to 9.

Col. 7 **ERAP Index.** This column gives the quantity above which an approved ERAP is required in accordance with section 7.1 of Part 7 (Emergency Response Assistance Plan).

The quantity is expressed in kilograms for solids, in litres for liquids, and, for gases, as the capacity in litres of the means of containment. For Class 1, Explosives, the quantity is expressed either in kilograms of net explosives quantity or, if the explosives are subject to special provision 85 or 86, number of articles.

For dangerous goods included in Class 3, Flammable Liquids, with the UN number UN1170, UN1202, UN1203, UN1267, UN1268, UN1863, UN1987, UN1993, UN3295, UN3475 or UN3494, see paragraph 7.2(1)(f) of Part 7 (Emergency Response Assistance Plan), which sets out the ERAP requirements for those dangerous goods. For Class 6.2, Infectious Substances, see paragraph 7.2(1)(g) of Part 7 (Emergency Response Assistance Plan), which sets out the ERAP requirements for certain human pathogens.

The quantity applies to the row in this Schedule in which it appears. For example, UN1986 may require an ERAP for Packing Group I but not for Packing Group II or III.

If no index is shown, an ERAP is not required unless the dangerous goods are subject to special provision 84 or 150.

Col. 8 **Passenger Carrying Vessel Index.** This column gives the maximum quantity of dangerous goods that may be transported, per means of containment, on board a passenger carrying vessel *(see section 1.6 of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases))*. The quantity limit is expressed in kilograms for solids, in litres for liquids, and, for gases, as the capacity in litres of the means of containment. For Class 1, Explosives, the quantity is expressed either in kilograms of net explosives quantity or, if the explosives are subject to special provision 85 or 86, in number of articles. There may be special stowage requirements or restrictions for some of these dangerous goods, and the consignor should contact the marine carrier for more information.

The word "Forbidden" in this column means that the dangerous goods must not be transported in any quantity on board a passenger carrying vessel. *A person may apply for a Permit for Equivalent Level of Safety to transport these dangerous goods (see Part 14 (Permit for Equivalent Level of Safety))*.

If no index number is shown, there is no quantity limit.

Col. 9 **Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index.** This column gives the maximum quantity of dangerous goods that may be transported, per means of containment, on board a passenger carrying road vehicle or a passenger carrying railway vehicle *(see section 1.6 of Part 1, (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases))*. The quantity limit is expressed in kilograms for solids, in litres for liquids, and, for gases, as the capacity in litres of the means of containment. For Class 1, Explosives, the quantity is expressed either in kilograms of net explosives quantity or, if the explosives are subject to special provision 85 or 86, in number of articles.

The word "Forbidden" in this column means that the dangerous goods must not be transported in any quantity on board a passenger carrying road vehicle or a passenger carrying railway vehicle. *A person may apply for a permit for Equivalent Level of Safety to transport these dangerous goods (see Part 14 (Permit for Equivalent Level of Safety))*.

If no index number is shown, there is no quantity limit.

Col 1	*Col 2*	*Col 3*	*Col 4*	*Col 5*	*Col 6a*	*Col 6b*	*Col 7*	*Col 8*	*Col 9*
UN Number	Shipping Name and Description	Class	Packing Group / Category	Special Provisions	Explosive Limit and Limited Quantity Index	Excepted Quantities	ERAP Index	Passenger Carrying Vessel Index	Passenger Carrying Road or Rail Vehicle Index
UN 2850	**PROPYLENE TETRAMER**	3	III		5 L	E1			60 L
UN 2851	**BORON TRIFLUORIDE DIHYDRATE**	8	II		1 L	E2			15 L
UN 2852	**DIPICRYL SULFIDE, WETTED** with not less than 10% water, by mass; or **DIPICRYL SULPHIDE, WETTED** with not less than 10% water, by mass	4.1	I	38	0	E0	75	Forbidden	Forbidden
UN 2853	**MAGNESIUM FLUOROSILICATE**	6.1	III		5 kg	E1			100 kg
UN 2854	**AMMONIUM FLUOROSILICATE**	6.1	III		5 kg	E1			100 kg
UN 2855	**ZINC FLUOROSILICATE**	6.1	III		5 kg	E1			100 kg
UN 2856	**FLUOROSILICATES, N.O.S.**	6.1	III	16	5 kg	E1			100 kg
UN 2857	**REFRIGERATING MACHINES** containing non-flammable, non-toxic, gases or ammonia solutions (UN2672)	2.2			0	E0			450 kg
UN 2858	**ZIRCONIUM, DRY**, coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns)	4.1	III		5 kg	E1			25 kg
UN 2859	**AMMONIUM METAVANADATE**	6.1	II		0.5 kg	E4			25 kg
UN 2861	**AMMONIUM POLYVANADATE**	6.1	II		0.5 kg	E4			25 kg
UN 2862	**VANADIUM PENTOXIDE**, non-fused form	6.1	III		5 kg	E1			100 kg
UN 2863	**SODIUM AMMONIUM VANADATE**	6.1	II		0.5 kg	E4			25 kg
UN 2864	**POTASSIUM METAVANADATE**	6.1	II		0.5 kg	E4			25 kg
UN 2865	**HYDROXYLAMINE SULFATE**; or **HYDROXYLAMINE SULPHATE**	8	III		5 kg	E1			25 kg
UN 2869	**TITANIUM TRICHLORIDE MIXTURE**	8	II III		1 kg 5 kg	E2 E1			15 kg 25 kg
UN 2870	**ALUMINUM BOROHYDRIDE**; or **ALUMINUM BOROHYDRIDE IN DEVICES**	4.2 (4.3)	I	38	0	E0	1000	Forbidden	Forbidden
UN 2871	**ANTIMONY POWDER**	6.1	III		5 kg	E1			100 kg
UN 2872	**DIBROMOCHLOROPROPANES**	6.1	II III		0.1 L 5 L	E4 E1	1000		5 L 60 L
UN 2873	**DIBUTYLAMINOETHANOL**	6.1	III		5 L	E1			60 L
UN 2874	**FURFURYL ALCOHOL**	6.1	III		5 L	E1			60 L
UN 2875	**HEXACHLOROPHENE**	6.1	III		5 kg	E1			100 kg
UN 2876	**RESORCINOL**	6.1	III		5 kg	E1			100 kg
UN 2878	**TITANIUM SPONGE GRANULES**; or **TITANIUM SPONGE POWDERS**	4.1	III		5 kg	E1		Forbidden	25 kg
UN 2879	**SELENIUM OXYCHLORIDE**	8 (6.1)	I		0	E0	1000	Forbidden	0.5 L
UN 2880	**CALCIUM HYPOCHLORITE, HYDRATED**, with not less than 5.5% but not more than 16% water; or **CALCIUM HYPOCHLORITE, HYDRATED MIXTURE**, with not less than 5.5% but not more than 16% water	5.1	II III	94 94, 117	1 kg 5 kg	E2 E1		Forbidden Forbidden	5 kg 25 kg
UN 2881	**METAL CATALYST, DRY**	4.2	I II III	16, 38 16 16	0 0 0	E0 E0 E1	1000		Forbidden Forbidden 25 kg
UN 2900	**INFECTIOUS SUBSTANCE, AFFECTING ANIMALS** only	6.2	Category A	16, 38, 164	0	E0			0.05 kg or 0.05 L
UN 2901	**BROMINE CHLORIDE**	2.3 (5.1) (8)		23, 38	0	E0	25	Forbidden	Forbidden
UN 2902	**PESTICIDE, LIQUID, TOXIC, N.O.S.**	6.1	I II III	16 16 16	0 0.1 L 5 L	E5 E4 E1	1000		1 L 5 L 60 L

Col 1	*Col 2*	*Col 3*	*Col 4*	*Col 5*	*Col 6a*	*Col 6b*	*Col 7*	*Col 8*	*Col 9*
UN Number	Shipping Name and Description	Class	Packing Group / Category	Special Provisions	Explosive Limit and Limited Quantity Index	Excepted Quantities	ERAP Index	Passenger Carrying Vessel Index	Passenger Carrying Road or Rail Vehicle Index
UN 2903	**PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S.**, flash point not less than 23°C	6.1 (3)	I II III	16 16 16	0 0.1 L 5 L	E5 E4 E1	1000		1 L 5 L 60 L
UN 2904	**CHLOROPHENOLATES, LIQUID**; or **PHENOLATES, LIQUID**	8	III		5 L	E1			5 L
UN 2905	**CHLOROPHENOLATES, SOLID**; or **PHENOLATES, SOLID**	8	III		5 kg	E1			25 kg
UN 2907	**ISOSORBIDE DINITRATE MIXTURE** with not less than 60% lactose, mannose, starch or calcium hydrogen phosphate	4.1	II	38	0	E0	75	Forbidden	15 kg
UN 2908	**RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - EMPTY PACKAGING**	7		72	0	E0			
UN 2909	**RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - ARTICLES MANUFACTURED FROM DEPLETED URANIUM; RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - ARTICLES MANUFACTURED FROM NATURAL THORIUM**; or **RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - ARTICLES MANUFACTURED FROM NATURAL URANIUM**	7		72	0	E0			
UN 2910	**RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - LIMITED QUANTITY OF MATERIAL**	7		72	0	E0			
UN 2911	**RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - ARTICLES**; or **RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - INSTRUMENTS**	7		72	0	E0			
UN 2912	**RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I)**, non-fissile or fissile excepted	7		74	0	E0	100		
UN 2913	**RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I)**, non-fissile or fissile excepted; or **RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-II)**, non-fissile or fissile excepted	7		74	0	E0			
UN 2915	**RADIOACTIVE MATERIAL, TYPE A PACKAGE**, non-special form, non-fissile or fissile excepted	7		74	0	E0			
UN 2916	**RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE**, non-fissile or fissile excepted	7		74	0	E0			
UN 2917	**RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE**, non-fissile or fissile excepted	7		74	0	E0			
UN 2919	**RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT**, non-fissile or fissile excepted	7		74	0	E0			
UN 2920	**CORROSIVE LIQUID, FLAMMABLE, N.O.S.**	8 (3)	I II	16 16	0 1 L	E0 E2	3000		0.5 L 1 L
UN 2921	**CORROSIVE SOLID, FLAMMABLE, N.O.S.**	8 (4.1)	I II	16 16	0 1 kg	E0 E2	3000		1 kg 15 kg
UN 2922	**CORROSIVE LIQUID, TOXIC, N.O.S.**	8 (6.1)	I II III	16 16 16	0 1 L 5 L	E0 E2 E1	3000		0.5 L 1 L 5 L
UN 2923	**CORROSIVE SOLID, TOXIC, N.O.S.**	8 (6.1)	I II III	16 16 16	0 1 kg 5 kg	E0 E2 E1	3000		1 kg 15 kg 25 kg
UN 2924	**FLAMMABLE LIQUID, CORROSIVE, N.O.S.**	3 (8)	I II III	16 16 16	0 1 L 5 L	E0 E2 E1	1000	Forbidden	0.5 L 1 L 5 L
UN 2925	**FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.**	4.1 (8)	II III	16 16	1 kg 5 kg	E2 E1	1000	Forbidden Forbidden	15 kg 25 kg

76. Despite section 5.7 of Part 5, Means of Containment, any combination of these dangerous goods included in Class 1, Explosives, may be handled, offered for transport or transported in a road vehicle if

(a) the total quantity of all the dangerous goods included in Class 1, expressed in net explosives quantity, is less than or equal to 5 kg;

(b) the total number of articles of dangerous goods subject to special provision 86 is less than or equal to 100 articles; and

(c) the operator of the road vehicle has a valid Pyrotechnic Card that has been issued to the operator by the Explosives Regulatory Division of Natural Resources Canada.

UN0027, UN0066, UN0094, UN0101, UN0105, UN0161, UN0197, UN0255, UN0305, UN0325, UN0335, UN0336, UN0337, UN0349, UN0430, UN0431, UN0432, UN0454, UN0499

77. *Repealed*

78. These dangerous goods do not include ammonium permanganate which is forbidden for transport. (See Schedule 3)

UN1482

79. These dangerous goods are forbidden for transport if they contain less alcohol, water or phlegmatizer than specified in the descriptive text associated with the shipping name.

UN0072, UN0074, UN0075, UN0113, UN0114, UN0129, UN0130, UN0133, UN0135, UN0143, UN0150, UN0159, UN0226, UN0391, UN0433

80. Despite section 1.17 of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases), a person must not offer for transport or transport these dangerous goods unless they are in a means of containment that is in compliance with the requirements for transporting gases in Part 5 (Means of Containment).

UN1950, UN2037

81. *Repealed*

82. *Repealed*

83. *Repealed*

84. An approved ERAP is required for the dangerous goods referred to in paragraph 7.2(1)(g) of Part 7 (Emergency Response Assistance Plan).

UN2814

85. Despite the index number in column 6(a) of Schedule 1, these dangerous goods may be handled, offered for transport or transported in accordance with section 1.31 of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) when they are in a quantity that is less than or equal to 15,000 articles.

UN0044

86. Despite the index number in column 6(a) of Schedule 1, these dangerous goods may be handled, offered for transport or transported in accordance with section 1.31 of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) when they are in a quantity that is less than or equal to 100 articles.

UN0029, UN0030, UN0121, UN0131, UN0255, UN0267, UN0315, UN0325, UN0349, UN0360, UN0361, UN0367, UN0368, UN0454 to UN0456, UN0500

87. Despite the word "Forbidden" in column 9 of Schedule 1, these dangerous goods may be transported on a passenger carrying road vehicle or a passenger carrying railway vehicle in accordance with section 1.15 of Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases, when they are used for medical purposes during transport and are in a means of containment with a capacity less than or equal to 1 L.

UN1073

88. Despite the quantity limits in column 9 of Schedule 1 for these dangerous goods, a road vehicle is not a passenger carrying road vehicle unless the passengers in it are transported for hire or reward.

UN1202, UN1203, UN1978

89. *Repealed*

90. 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 these dangerous goods on a road vehicle, a railway vehicle or on vessel on a domestic voyage if

(a) these dangerous goods are contained in small means of containment that

(i) are constructed of metal or robust, electrically conductive plastic,

(ii) are designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of these dangerous goods that could endanger public safety, and

(iii) each have a capacity that is less than or equal to 500 g;

(b) the gross mass of all these dangerous goods is 12 kg or less;

(c) the gross mass of all the dangerous goods, including that of these dangerous goods,

(i) is less than or equal to 150 kg for dangerous goods transported on the road vehicle or the railway vehicle, and

(ii) is less than or equal to 150 kg for dangerous goods transported on the vessel, excluding dangerous goods in a road vehicle or railway vehicle being transported on the vessel; and

(d) these dangerous goods are in a quantity or concentration available to the general public and are transported by

(i) a user or purchaser of these dangerous goods, or

(ii) a retailer to or from a user or purchaser of these dangerous goods.

UN0027, UN0028

91. *Repealed*

146. This shipping name must not be used for small means of containment, large means of containment or intermediate bulk containers (IBC), or parts of them, unless they

(a) have contained dangerous goods other than radioactive materials;

(b) are transported for disposal, recycling, or recovery of their material other than for the purpose of reconditioning, repair, routine maintenance, remanufacturing or reuse; and

(c) have, when offered for transport, been emptied to the extent that only residues of dangerous goods adhering to parts of the means of containment are present.

UN3509

147. Despite explosives packing instruction EP 17 of CGSB-43.151, a person must not handle, offer for transport or transport these dangerous goods in a UN portable tank or a highway tank.

UN0331

148. **(1)** Part 5 (Means of Containment) does not apply to radiation detectors that contain these dangerous goods in non-refillable pressure receptacles if

(a) the working pressure in each receptacle is less than 5,000 KPa;

(b) the capacity of each receptacle is less than 12 L;

(c) each receptacle has a minimum burst pressure of

(i) at least 3 times the working pressure, when the receptacle is fitted with a relief device, or

(ii) at least 4 times the working pressure, when the receptacle is not fitted with a relief device;

(d) each receptacle is manufactured from material that will not fragment upon rupture;

(e) each detector is manufactured under a quality assurance program;

ISO 9001:2008 is an example of a quality assurance program.

(f) the detectors are transported in strong outer means of containment; and

(g) a detector in its outer means of containment is capable of withstanding a 1.2 m drop test without breakage of the detector or rupture of the outer means of containment.

(2) Part 5 (Means of Containment) does not apply to radiation detectors that contain these dangerous goods in non-refillable pressure receptacles and that are included in equipment, if

(a) the conditions set out in paragraphs (1)(a) to (e) are met; and

(b) the equipment is contained in a strong outer means of containment or the equipment affords the detectors with protection that is equivalent to that provided by a strong outer means of containment.

(3) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to radiation detectors that contain these dangerous goods in non-refillable pressure receptacles, including detectors in radiation detection systems, if the detectors meet the requirements of subsection (1) or (2), as applicable, and the capacity of the receptacles that contain the detectors is less than 50 mL.

UN1006, UN1013, UN1046, UN1056, UN1065, UN1066, UN1956, UN2036

149. These dangerous goods are forbidden for transport as cargo on a passenger aircraft.

UN3090, UN3480

150. An approved ERAP is required for the dangerous goods referred to in paragraph 7.2(1)(f) of Part 7 (Emergency Response Assistance Plan).

UN1170, UN1202, UN1203, UN1267, UN1268, UN1863, UN1987, UN1993, UN3295, UN3475, UN3494

151. *Repealed*

152. Plastic moulding compounds that are made from polystyrene, poly(methyl methacrylate) or other polymeric material may be offered for transport, handled or transported under this shipping name.

UN3314

153. **(1)** This shipping name applies to polyester resin kits that consist of

(a) a base material that is a dangerous good included in Class 3 or 4.1 and in Packing Group II or III; and

(b) an activator that is an organic peroxide of type D, E or F that is included in Class 5.2 and does not require temperature control.

(2) The quantity of the base material in an inner means of containment must

(a) in the case of a solid, have a mass that is less than or equal to the number set out in column 1 of the table to subsection 1.17.1(2) of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) for the corresponding alphanumeric code set out in column 6(b) of Schedule 1, if that number is expressed in grams; and

(b) in the case of a liquid, have a volume that is less than or equal to the number set out in column 1 of the table to subsection 1.17.1(2) of Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) for the corresponding alphanumeric code set out in column 6(b) of Schedule 1, if that number is expressed in millilitres.

UN3269, UN3527

154. **(1)** These shipping names apply to engines or machinery that include internal combustion systems or fuel cells that run on and contain fuels that are dangerous goods. The engines or machinery include combustion engines, generators, compressors, turbines and heating units.

(2) Engines or machinery containing fuels that are included in Class 3, may be imported, offered for transport, handled or transported under UN3528, ENGINE, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or UN3528, ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or UN3528, MACHINERY, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or UN3528, MACHINERY, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate.

(3) Engines or machinery containing fuels that are included in Class 2.1 and engines or machinery that run on both a flammable gas and a flammable liquid may be imported, offered for transport, handled or transported under UN3529, ENGINE, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or UN3529, ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or UN3529, MACHINERY, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or UN3529, MACHINERY, FUEL CELL, FLAMMABLE GAS POWERED, as appropriate.

(4) Engines or machinery containing liquid fuels that are included in Class 9 but do not meet the classification criteria of any other class, may be imported, offered for transport, handled or transported under UN3530, ENGINE, INTERNAL COMBUSTION or UN3530, MACHINERY, INTERNAL COMBUSTION, as appropriate.

TDG Resources

We encourage you to add your own resource information to this section, such as:

- sample shipping documents,
- TDG training materials,
- your company policies and procedures relating to dangerous goods,
- addresses of useful websites, and
- a list of contacts and suppliers.

We have included the most recent **Regulatory Impact Analysis Statements** (RIAS) describing the background and rationale for changes to the Transportation of Dangerous Goods Regulations.

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Regulatory Impact Analysis Statement

Containers for Transport of Dangerous Goods by Rail

This statement is not part of the Regulations.

Executive summary

Issues

The *Transportation of Dangerous Goods Regulations* (TDGR) required updating to reflect the most current edition of the Containers for Transport of Dangerous Goods by Rail, a Transport Canada Standard (TP 14877), which was published in 2018. Prior to this amendment, the TDGR incorporated by reference the 2013 edition of the standard. This amendment is necessary for the 2018 edition of TP 14877 to be incorporated by reference in the TDGR.

Description

This amendment will

- require all tank cars used to transport toxic inhalation hazard (TIH) substances to be constructed of normalized steel. The interim TIH tank car standard will also be changed to the permanent TIH tank car standard;
- enhance alignment between Canada and the United States (U.S.) for one-time movement approvals (OTMAs);
- align with best practices by permitting 304L and 316L stainless steel varieties as an acceptable material of construction for tank cars and accounting for mileage into the stub sill inspection requirements; and
- consolidate and clarify the regulatory requirements.

Cost-benefit statement

The extended service life of interim TIH tank cars provides rail shippers cost savings of $187.3M mainly from avoided replacement costs of tank cars. The phase-out of non-normalized steel tank cars for transporting TIH substances will also accrue benefits of about $21.4M by reducing risks to public safety, health, and the environment. Rail shippers will incur an estimated cost of $17.86M due to the phase out of tank cars. Together, the two amendments are expected to yield net benefits of about $191.9M over the 2021–2068 period (in 2017 Can$).

"One-for-One" Rule and small business lens

The "One-for-One" Rule applies, as there is an administrative burden imposed on rail shippers from the written notifications required for the OTMAs of overloaded railway vehicles. This requirement is considered an "IN" and will represent annualized costs of about $860, or $17 per business (in 2012 Can$). The small business lens does not apply.

Domestic and international coordination and cooperation

This amendment will enhance alignment with the U.S. hazardous materials requirements by providing rail shippers with consistent rules on both sides of the border while increasing the safety of rail transportation of dangerous goods. In developing TP 14877, Transport Canada (TC) held ongoing discussions with U.S. regulators to ensure regulations are harmonized where appropriate. The amendment is also consistent with the objective of the Canada–U.S. Regulatory Cooperation Council, which is to improve Canada–U.S. regulatory approaches to make it easier for industry to do business for both countries.

Background

Dangerous goods are used in almost every facet of Canadians' lives, from fuelling vehicles and providing home comfort, to manufacturing and industrial processes. Dangerous goods are also an important aspect of the Canadian economy, with an estimated 30 million shipments transported within Canada each year in which approximately 24% are transported by rail. Despite their importance to modern life and the economy, dangerous goods can be toxic, infectious, flammable, explosive, corrosive, combustible, radioactive, or pose other hazards. They can be harmful to people, property and the environment if they are not handled or transported properly.

In Canada, the transportation of dangerous goods is regulated under the *Transportation of Dangerous Goods Act, 1992* (TDG Act), the *Transportation of Dangerous Goods Regulations* (TDGR) and standards incorporated by reference into the TDGR. To reduce safety risks during transport, the TDGR establish requirements to reduce the likelihood and consequences of unintended releases of dangerous goods. The TDGR include requirements related to every stage involved in the transportation of dangerous goods, such as handling, offering for transport, safety marks, means of containment, training, and emergency response assistance.

Prior to this amendment, the TDGR incorporated by reference the 2013 version of Containers for Transport of Dangerous Goods by Rail, which is a Transport Canada Standard (TP 14877). This standard sets the requirements for the design, handling, offering for transport, and transporting of dangerous goods by rail. The requirements pertain to the construction, modification, qualification, maintenance, and use of tank cars and ton containers in rail.

The TP 14877 Standard was updated in 2018 to reflect changes in tank car specifications to increase safety when transporting dangerous goods by rail and to better align with U.S. standards. The 2018 version of TP 14877 will be incorporated into the TDGR with this amendment.

Following the incident of Lac-Mégantic in 2013, TC issued three protective directions (PD) aimed at improving safety in the transportation of flammable liquids by rail through various requirements related to tank cars specifications. These protective directions are PD No. 34, PD No. 37, and PD No. 38. Protective directions are regulated under Part 13 of the TDGR.

Issues

This amendment will address three main issues with the current TP 14877.

I. Safety risk associated with non-normalized steel tank cars for the transportation of toxic inhalation hazard substances

Tank cars made of non-normalized steel used to ship toxic inhalation hazard (TIH) substances by rail present a risk to the safety of Canadians and to the natural and built environments. TIH substances are considered amongst the most dangerous goods permitted for transport, as they can be fatal at high concentrations and can spread easily in an area if released.

Non-normalized steel tank cars are more likely to form brittle fractures over time which increases the likelihood of ruptures in the event of an accident. In addition, non-normalized steel is more susceptible to brittle fractures when exposed to cold temperatures during winter. At this time, it is estimated that about 10% of the TIH tank cars used by shippers are made of non-normalized steel.

Newly built TIH tank cars must be designed in accordance with the interim TIH specifications (hereafter referred to as the "interim TIH tank cars"). Interim TIH tank cars feature safety enhancements like normalized steel, a combination of thicker inner shells and outer jackets to improve puncture resistance, full head shield and additional protection for the valves, fittings and nozzles used to load and unload the tank car. The current permitted service life of interim TIH tank cars (i.e. made with normalized steel) is 20 years, which is notably shorter than the standard 50-year service life newly constructed tank cars. The shorter service life creates a disincentive for Canadian shippers to replace their non-normalized tank car fleet with interim TIH tank cars.

II. Misalignment between Canada and the U.S.

An initiative under the Regulatory Cooperation Council (RCC) is harmonizing regulatory activities to support the reciprocal recognition of one-time movement approvals (OTMAs) and temporary or emergency certificates issued under the TDG Act to move non-conforming tank cars and means of containment by rail to a nearby location. Under TP 14877, the one-time movement must be for the purposes of cleaning, testing, repairing, dismantling or unloading containers that are not actively leaking and only when it is not possible or unsafe to remedy the non-conformance at the location where it was discovered. For example, OTMAs can be used for an overloaded tank car, a tank car with a defective interior lining or coating, a tank car with a defective interior heater coil. These approvals are issued in situations where it is determined that the movement of a leaking tank car or means of containment would provide greater safety than allowing it to remain in place.

Prior to this amendment, the OTMAs process for transporting dangerous goods by rail was not aligned between the Canada and the U.S. For example, in the U.S., shippers must apply for OTMAs for certain overloaded tank cars while in Canada, written approvals were not required, as long as the conditions set out in TP 14877 were met. This misalignment caused confusion, added burden to shippers as well as unintended consequences where overloaded tank cars posed a risk to safety.

III. Unconsolidated requirements

Following the devastating incident in Lac-Mégantic in July 2013, TC implemented a number of requirements to improve the safety of transporting dangerous goods by rail. These requirements were implemented through a combination of amendments to the TDGR, updates to TP 14877, and the adoption of several protective directions. As a result, these requirements were found in different sources, which made it more time consuming and confusing for regulatees who wished to consult the requirements. The table below includes the regulatory requirements implemented through the various instruments.

TABLE 1
Regulatory requirements related to transporting dangerous goods by rail

Regulatory Instrument	Summary of Requirements	Effective Date
Protective direction no. 34	Prohibits the transport of dangerous goods in certain Class 111 tank cars made of low-toughness steel when the bottom of the car is not continuously reinforced	**April 23, 2014**
TDGR, Part 5	Updated requirements for flammable liquids Adoption of new tank car specification, TC 117	May 1, 2015
Corrigendum	Contains minor corrections to TP 14877	June 2015
Protective direction no. 37	Requires top fitting protection for retrofitted TC-111 tank cars	November 1, 2016
Protective direction no. 38	Accelerates the phase-out of the enhanced TC-111 tank cars for crude oil service to November 1, 2016	July 26, 2016

Objectives

The amendments will incorporate by reference the 2018 edition of TP 14877. The updates made to TP 14877 seek to

- reduce the risks associated with the transportation of TIH substances by rail;
- facilitate cross-border trade of dangerous goods and increase safety through better alignment with U.S. and international standards, where appropriate;
- provide more flexibility to stakeholders on the transportation of dangerous goods by rail by allowing new technologies and practices; and
- consolidate and clarify the requirements to make it easier for stakeholders to retrieve and consult.

Description

Incorporation of the revised TP 14877 will require all rail carriers and consignors that import, handle, offer for transport or transport dangerous goods in a railway vehicle to implement all changes made in the 2018 edition of TP 14877. The requirements have been summarized and grouped under four categories.

1. Tank car safety

1.1 Normalized steel for TIH tank cars

The head and shell of tank cars transporting TIH substances will be required to be made of normalized steel. This requirement will take effect on July 2, 2021.

1.2 TIH tank standard

The interim TIH tank standard (referred in the U.S. as HM-246) will become the permanent standard. The service life of these cars will also be extended to 50 years which is consistent with the U.S.

1.3 Carbon steel thickness

The thickness of any new pressure tank car constructed using carbon steel of 483 to 558 MPa (70,000 to 81,000 psi) minimum tensile strength will be increased from 16 mm (5/8 inch) to 16.7 mm (21/32 inch).

1.4 Thermal blanket

A new requirement was added to the thermal protection systems for new Class 117 tank cars. The thermal protection system of newly built Class 117 tank cars must include at least a 12.7 mm (1/2 inch) thick ceramic fibre blanket.

1.5 Removal of expired equivalency certificate stencil markings

A new requirement was added for tank cars authorized for transport under an equivalency certificate. If the tank car meets all the requirements of the standard, the equivalency certificate stencil marking must be removed at the next tank qualification.

2. Alignment with other jurisdictions

2.1 One-time movement of non-conforming containers

The requirements for the one-time movement approvals for non-conforming tank cars and means of containment will be fully harmonized between the U.S. and Canada. Written notifications for the one-time movement of overloaded railway vehicles by weight will be required. Applicants may apply for written notification if

1. a tank car is found to be overloaded by weight in transport by 1,361 kg (3,000 lb) or less when measured on a weight-in-motion scale or 454 kg (1,000 lb) or less when measured on a static scale, as long as the outage is within regulatory limits; or
2. a railway vehicle other than a tank car carrying solid dangerous goods is found to be overloaded by weight in transport by 2,268 kg (5,000 lb) or less when measured by a scale.

Applicants will be required to submit the following information to TC to obtain written notifications:

1. Scale tickets;
2. Loading temperature and specific gravity of commodity at the loading temperature;
3. Specific gravity of commodity at appropriate reference temperature;
4. Capacity of the container and weight of the empty container;
5. Innage/outage table for the tank car. These tables assist shippers in determining the correct filling level as they are used to calculate the volume of goods loaded in a tank car by measuring the product level. The innage table indicates the volume in a tank at quarter-inch increments. The outage table indicates the volume out of a tank at quarter-inch increments; and
6. Any additional information that can be used to demonstrate that the tank car is not overloaded by volume.

The standard provides a number of situations in which the movement of certain non-conforming tank cars and other railway vehicles may be transported for the purposes of cleaning, repairing, testing, dismantling or unloading. Table 2 summarizes the changes made to the low-risk safety approvals to improve harmonization with the U.S. Hazardous Materials Regulations — Title 49 of the "Code of Federal Regulations" (49 CFR).

TABLE 2
Summary of changes to the low-risk safety approvals for the one-time movement of non-conforming containers

Situation	Change
Cleaned or residue railway vehicles	Expanded to include a non-dangerous goods railway vehicle and a clean hopper car. Hopper cars are types of cars in which commodities are released through its floor. They are often used for transporting grains, plastic pellets, cement, flour, sugar and various minerals.
Tank car with missing or damaged service equipment	Removed the exclusion of missing or damaged eduction pipes. Eduction pipes can be used for unloading the commodity in liquid form from the top of the tank. It is the pipe that runs from the valves to the tank. The valves can be used for loading or unloading liquids or for introducing or removing vapor from the tank.
Tank car with defective interior heater coils	Only applies to tank car with defective interior heater containing dangerous goods residue. Interior heaters are used to keep the commodities warm or to heat them to facilitate unloading. Removed interior heater closure (the cap or other type of closure used to close off the piping of the interior heater). Removed the condition that dangerous goods residue must be solidified.
Structurally damaged tank car	Expanded to include a tank car containing residual amounts of dangerous substances with structural damage that does not affect its product retention capability.

The wording was also modified to specify that the use of a one-time movement of non-conforming containers only applies to railway vehicles that were in conformance with the standard prior to the discovery of a non-conformity.

The section "Maintenance of Defective Tank Car Service Equipment in Transportation" was also renamed to "Low Risk Safety Approvals."

2.2 TP 14877 special provisions

Schedule 1 provides the text of the special provisions that apply to various dangerous goods. If a special provision is listed in Column 6 in Schedule 2, the container type listed in the applicable special provision must be used. For example, in Schedule 2, Benzyl chloride (UN1738) has special provision no. 3 which states that it may be handled, offered for transport, or transported in a Class 105, 111, 112, 114, 115, 117, 120, or AAR 206W tank car, or a Class 106 or 110 ton container. Schedule 1 and Schedule 2 were modified to align with both the 19th edition of the United Nations (UN) Recommendations and the 49 CFR. For example, a new special provision (no. 87) was created for Sulphuric Acid (UN1831) to combine 4 existing special provisions specific to sulfuric acid, fuming containing 30% or more of free sulphur trioxide. Having these requirements organized together in one special provision improves the ease of use and aligns with the 49 CFR.

The previous standard had two entries for sulfuric acid that were based on the free sulphur trioxide content. With the addition of the new special provision, there would only be one entry for sulfuric acid, fuming which is consistent with the UN Model Regulations.

3. Incorporation of best practices

Updates were made to TP 14877 to improve alignment with best practices used by industry.

3.1 Stainless steel

Low carbon grade stainless steel varieties such as 304L and 316L are now permitted as an acceptable material of construction. Previously, these types of stainless steel were permitted in the U.S. but not in Canada, which caused confusion and extra burden for cross-border shipments.

3.2 Enhanced Class 111 tank car requirement

Shippers will be required to use an enhanced Class 111 tank car for transporting Packing Group I and II substances (excluding flammable liquids and TIH substances) if the car was built after October 1, 2015. This requirement applies to dangerous goods posing a medium to high danger (packing groups I and II). Prior to this amendment, shippers only needed to use an enhanced Class 111 tank car if it was built after January 15, 2015. An enhanced Class 111 tank car offers additional safety protection in the way of increased shell thickness, normalized steel, and top-fitting protection over conventional Class 111 tank cars.

3.3 Stub sill inspection

Attached to the underside of the tank, the stub sill is the structural member of the car's underframe that connects the tank cars and is also the attachment point for the wheel sets. The interval for inspecting the stub sill was modified to account for mileage. An inspection will be required once every 10 years, or when the tank car reaches 200,000 miles or 500,000 miles. The mileage threshold depends on the design, build date and inspection date.

3.4 Manway nozzle

The manway is the circular opening located at the top of the tank car. It provides access to the tank for maintenance, inspection, and loading or unloading. The manway nozzle is the short tube projecting from the top of the tank car. Insulation requirements were modified to remove the need to insulate the manway nozzle so that insulation will only be needed for the tank shell and head. Since calculations for thermal protection and heat loss already account for discontinuities from the manway nozzle, it is not necessary to apply the insulation requirements to the manway nozzle.

When conducting tank pressure tests, the tank will only need to be filled to the top of the manway nozzle. The previous standard required that the tank be completely filled for tank pressure tests.

3.5 Hydrogen peroxide

A new special provision (no. 85) was added to Hydrogen Peroxide (UN2014/UN2015) to provide flexibility to railway shippers. With this new special provision, the grounding cables do not need to be electrically grounded and the electrical circuits do not need an additional path for the electrical current to return safely to the ground during loading and unloading, as long as fire safety measures have been taken to prevent the exposure of the dangerous goods to fire hazards, including sources of ignition, intense heat and flammable materials.

4. Clarification and consolidation of requirements

4.1 Consolidation

Before this amendment, stakeholders needed to consult multiple documents to determine the requirements for transporting dangerous goods by rail. The revised TP 14877 consolidates the requirements from

- Corrigendum – June 2015
- PD No. 34
- PD No. 37
- PD No. 38
- TDGR, Part 5

4.2 Reorganization of sections

A list of acceptable TC 117 equivalents was reorganized and moved to one section of TP 14877 to clarify that shippers can use specifications that exceed the safety requirements of TC 117.

The rail reporting requirements found in section 5.15.11 of the TDGR is moved to Part 10 of the TDGR to keep the rail requirements in Part 10.

A new section is added to Part 10 of the TDGR to consolidate and specify the rail container requirements for transporting flammable liquids as well as transporting dangerous goods from the U.S. into or through Canada. Previously, the various phase-out dates of tank cars for transporting specific flammable liquids were indicated in both the standard and the TDGR. For example, the requirement stating that "starting on May 1, 2025, a person must not import, offer for transport, handle or transport flammable liquids in packing groups I, II or III in a tank car unless the tank car is a TC 117R, TC 117 or TC 117P tank car" is repeated in both the standard and the TDGR. These requirements were removed from the TDGR and replaced with a reference to the TP 14877.

4.3 Inspections

Clarifications were made to the tank car inspections. For instance, the maximum tank car inspection interval is now specified compared to previously specifying only the minimum interval. Further details, such as checking the required markings for legibility and correctness, were also added to the visual inspection to help stakeholders carry out their visual inspections.

4.4 Definitions

A number of definitions were modified or added for clarity or to harmonize with the Association of American Railroads (AAR) and the U.S. Department of Transportation (DOT). For example, the 2013 version of TP 14877 had one definition of "closure." The revised standard added "primary closure" and "secondary closure" to the list of definitions to better distinguish these closures. The definition of "Director" was also updated to specify the "Executive Director, Regulatory Frameworks and International Engagement." Modifications were also made to the definitions of "check valve," "crude oil," "nozzle," "one million mile fatigue life," and "tank."

4.5 References

References included in the 2018 edition of TP 14877 were updated. For instance, the reference to the 2013 version of the Field Manual of the Interchange Rules of the AAR was updated to the current 2016 version. References to the American Society for Testing and Materials (ASTM) and Canadian Standard Association (CSA) standards were also updated to incorporate the most recent editions.

4.6 Equivalency certificates

The list of equivalency certificates for tank cars authorized to exceed 119,295 kg but not to exceed 129,727 kg was updated to remove 12 equivalency certificates as they were no longer required.

Regulatory and non-regulatory options considered

Tank cars are built to the specifications dictated under the TDGR and associated standards. In Canada, dangerous goods must be transported in approved containers that are built to the appropriate standard(s).

A voluntary approach to adopting a new tank car standard was not considered to be a feasible option. Given the risks involved in transporting TIH substances, it was imperative that TC bring forward appropriate tank car specifications to protect public safety and the environment. In light of this, non-regulatory options were not considered to be effective in achieving the desired safety objectives of this amendment.

As part of its regulatory analysis, TC considered a longer implementation schedule to allow the U.S. to complete its adoption of normalized steel and allow stakeholders more time to build new tank cars. However, based on several factors such as Canada's colder climate, an analysis of the current fleet of normalized steel tank cars, and the expectation of the U.S. government to follow in the same direction, it was determined that the implementation schedule strikes the right balance between the need to ensure public safety of TIH rail transport and providing adequate time to comply with the new requirements, as well as ensuring there are no potential supply interruptions due to a shortage of compliant tank cars.

Benefits and costs

A cost-benefit analysis was conducted for two updates related to TIH tank cars under TP 14877: the phase-out of non-normalized steel TIH tank cars, and the extension of service life of interim TIH tank cars from 20 to 50 years.

The benefits associated with the phase-out of non-normalized steel tank cars are estimated to be about $22.4M, and the costs about $17.9M. The benefits for the extension of the year limit are estimated to be about $187.3M. Together, the two updates are expected to yield net benefits of about $191.9M.

Analytical framework

The cost-benefit analysis assesses the incremental impacts using baseline and regulatory scenarios. The costs and benefits of the updates have been assessed in accordance with the Canadian Cost-Benefit Analysis Guide developed by the Treasury Board Secretariat (TBS).[2]

The timeframe of analysis covers the 2021–2068 period. This timeframe was adopted in order to appropriately capture the incremental impacts associated with the extension of service life. All benefits and costs are discounted to a base year of 2019 with a real discount rate of 7% in accordance with TBS guidance. All costs and benefits are expressed in 2017 Can$ unless otherwise indicated.[3]

A. Phase-out of non-normalized steel TIH tank cars

The update on the phase-out of non-normalized steel TIH tank cars is expected to yield net benefits of about $4.5M.

2 Treasury Board Secretariat, Canadian Cost-Benefit Analysis Guide: Regulatory Proposals. 2016 Edition. (Preliminary, not yet published.)

3 Monetized values used throughout the analysis were converted using exchange rates and inflation rates published by the Bank of Canada. Source: Bank of Canada. Statistics on Exchange Rates and Inflation. Retrieved at https://www.bankofcanada.ca/rates/ (2018/03/12).

Cost

The phase-out of non-normalized steel TIH tank cars will result in costs to rail shippers of TIH substances for the replacement of non-normalized TIH tank cars. The total costs are estimated to be about $17.9M. There will be no incremental costs imposed on the government from this update.

Costs to rail shippers

The incremental costs associated with the phase-out of non-normalized steel TIH tank cars have been estimated for leased tank cars (90% of the total non-normalized fleet) and for owned tank cars (i.e. the remaining 10% of the fleet). The costs are broken down for three categories of TIH substances shipped by rail: anhydrous ammonia, chlorine, and others.[4]

The phase-out costs to rail shippers include the higher leasing costs of normalized steel units for tank car lessees, the costs of purchasing new normalized units net of the salvage value of non-normalized units for tank car owners, as well as the costs of repurposing non-normalized units so they can be used to transport other goods that will require lower or equal technical specifications.

Given a current stock of non-normalized steel TIH tank cars estimated at a total of 349 units and a linear rate of phase-out expected to occur in the baseline, the total incremental costs associated with the replacement of non-normalized tank cars are estimated to be about $17.86M. Table 3 presents the incremental costs of leasing, purchasing, and repurposing, by category of TIH substance.

TABLE 3
Total costs of phasing out non-normalized steel TIH tank cars

TIH substance	Leasing costs (cumulative over 2021–2035)	Purchasing costs* (incurred in 2021)	Repurposing costs (incurred in 2021)	Total costs
Anhydrous ammonia	$3.28M	$658K	$287K	$4.23M
Chlorine	$5.57M	$1.12M	$490K	$7.18M
Others	$5.00M	$1.01M	$439K	$6.45M
Total	**$13.85M**	**$2.79M**	**$1.22M**	**$17.86M**

* The purchasing costs of normalized steel units are netted out of the salvage value of non-normalized steel units.
Note: Totals may not add up due to rounding.

Benefit

The phase-out of non-normalized steel TIH tank cars will reduce the likelihood of a fracture to the head and shell of tank cars in case of accidents, thereby preventing potential leaks of TIH substances in the surrounding environment. Benefits from avoided impacts of TIH leaks have been estimated for rail shippers and for Canadians. In total, the benefits are estimated to be $22.45M.

Benefits to rail shippers

Rail shippers are expected to benefit from the phase-out by avoiding potential damages to property such as railroad rolling stock and equipment, track, signal systems, and railroad-related lading.[5] In addition, preventing leaks may also avoid closures of rail tracks since TIH releases can force rerouting of rail traffic over other tracks and can prolong the distance needed to ship freight, and may induce extra tolls for the use of alternate tracks. The benefits to rail shippers are estimated to be about $902K. Table 4 presents the benefits to rail shippers.

4 Anhydrous ammonia represents 86% of total TIH shipments by rail in Canada and chlorine represents 7%. The category "others" includes all remaining TIH substances transported by rail in Canada, which include ethylene oxide, hydrogen fluoride, hydrogen sulphide, sulphur dioxide, sulphuric acid, nitriles, and organophosphorus compounds.

5 While assets such as tracks are owned by railways rather than rail shippers, repair and replacement costs incurred as a result of damages caused by TIH leaks may have to be recovered by rail shippers.

TABLE 4
Benefits to rail shippers (2017 Can$)

Type of benefit	Total benefits
Property damages (avoided)	$313.2K
Track out of service (avoided)	$588.7K
Total	**$901.9K**

Benefits to Canadians

There are a four types of benefits to Canadians from this update. First, reduced leaks may prevent human deaths and/or severe health problems from inhalation of toxic TIH vapours.[6] Second, it will reduce environmental damages.[7] Third, it will prevent evacuations of communities located near the tracks. Fourth, there will be avoided electric disruptions and road closures which will prevent temporary business closures and diversion of traffic. In total, the benefits to Canadians are estimated to be about $21.54M. Table 5 below presents the results estimated for each type of benefit.

TABLE 5
Benefits to Canadians (2017 Can$)

Type of benefit	Total benefits
Human health impacts (avoided)	$20.1M
Environmental damages (avoided)	$942K
Electric disruption and road closures (avoided)	$270.8K
Evacuation costs (avoided)	$270.7K
Total	**$21.54M**
Note: Totals may not add up due to rounding.	

B. Extension of the year limit for the service life of interim TIH tank cars

The update on the extension of the year limit from 20 to 50 years is expected to yield net benefits of about $187.3M. These will be accrued by rail shippers from cost savings associated with a longer service life of interim TIH tank cars.

Benefits to rail shippers

The cost-benefit analysis on the extension of service life from 20 to 50 years reflects the difference between the costs of a given fleet of interim TIH tank cars under a 50-year limit (regulatory) and the costs of the same fleet under a 20-year limit (baseline). The costs considered in each scenario include those associated with the replacement, maintenance, and repurposing of interim TIH tank cars over a timeframe of 2021–2068.

Considering an existing stock of interim TIH tank cars estimated at 860 units, as well as an annual production of new units estimated at about 287 units over a 10-year period (2019–2028), the total benefits accrued to rail shippers are estimated to be about $187.3M, as shown in Table 6.

6 When large leaks occur, TIH substances evaporate rapidly, forming clouds of toxic gases which can be carried in long distances by winds. This may severely harm the health of nearby populations who inhale the gases by causing severe problems to vital organs of the body. Examples of these problems include reactive airways dysfunction syndrome (RADS), general respiratory distress, and eye, throat, and skin irritation. Some individuals that have been acutely exposed to these gaseous substances have also developed chronic lung conditions such as bronchitis, tracheobronchitis, bronchiectasis, rhinitis, and airway hyperresponsiveness.

7 Leaks of TIH substances can be harmful to ecologically sensitive areas located near railroad tracks (e.g. wetlands, endangered species and freshwater basins). For example, leaks of TIH in freshwater can change the pH levels, which could lead to the loss of aquatic wildlife. TIH leaks can also alter the soil chemistry and make forests and other terrestrial ecosystems vulnerable to diseases.

TABLE 6
Benefits to rail shippers from cost savings (Can$ 2017)

Type of costs	20-year time limit (Baseline)	50-year time limit (Regulatory)	Total benefits
Replacement (purchasing)*	$203.80M	$1.25M	$202.6M
Maintenance	$8.63M	$29.85M	($21.22M)
Repurpose	$5.89M	0	$5.89M
Total	**$218.3M**	**$31.1M**	**$187.3M**

* Values for replacement costs under the baseline and regulatory scenarios are net of residual values.
Note: Totals may not add up due to rounding.

Summary of benefits and cost

Transport Canada estimates that the update on the phase-out of non-normalized steel will impose costs to rail shippers of about $17.9M, compared to benefits to rail shippers of about $0.9M and benefits to Canadians of about $21.4M. The net benefits are expected to be about $4.5M. The update on the extension of service life of interim TIH tank cars is expected to yield benefits to rail shippers in terms of cost savings, mainly from avoided replacement costs of tank cars. The total benefits accrued to shippers are expected to be about $187.3M.

The benefit-cost ratio for the update on the phase-out of non-normalized steel TIH tank cars is 1.26. Since the benefit from the extension of service life of interim TIH tank cars is a cost saving, no benefit-cost ratio was estimated for this update.

Together, the two updates are expected to yield net benefits of about $191.9M, as shown in the Consolidated Cost-Benefit Statement.

Consolidated cost-benefit statement

Base year	Price year	Period of analysis	Discount rate	Sensitivity analysis Total net benefit – present value	
				Lower bound	Upper bound
2019	Can$ 2017	2021–2068	7%	($133M)	$589M

		2021	2038	2068	Annualized value	Total PV
Cost-benefit statement **A. Normalized steel for TIH tank cars** **Monetized benefits**						
Benefits to Canadians	Human health impacts (avoided)	$3,061,000	$10,770	0	$2,054,600	$20,060,000
	Environmental damages (avoided)	$143,000	$506	0	$96,500	$942,000
	Electric disruption and road closures (avoided)	$41,320	$145	0	$27,700	$270,800
	Evacuations (avoided)	$41,300	$145	0	$27,700	$270,700
Benefits to rail shippers of TIH substances	Property damages (avoided)	$47,790	$168	0	$32,100	$313,200
	Track out of service (avoided)	$89,820	$316	0	$60,300	$588,700
Total monetized benefits		$3,425,000	$12,050	0	$2,298,900	$22,450,000
Monetized costs						
Costs to rail shippers of TIH substances	Leasing costs	$2,113,000	$7,433	0	$1,418,600	$13,850,000
	Purchasing costs	$2,790,000	0	0	$285,800	$2,790,000
	Repurposing costs	$1,216,000	0	0	$124,500	$1,216,000
Total monetized costs		$6,119,000	$7,433	0	$1,828,900	$17,856,000 Net
Net benefits		**($2,694,000)**	**$4,617**	**0**	**$470,100**	**$4,589,400**
B. Extension of year limit for the service life of interim TIH tank cars from 20 to 50 years. **Monetized benefits**						
Benefits to rail shippers of TIH substances and/or tank car owners	Cost savings	0	$16,150,000	($130,900)	$19,184,200	$187,300,000
Net benefits (A + B)					**$19,655,400**	**$191,900,000**

Note: Totals may not add up due to rounding.

Sensitivity analyses

Given the high level of uncertainty with regard to some data and assumptions, single and combined factor variance analyses were conducted. The results suggest that the net present value of the update on the phase-out of non-normalized steel TIH tank cars can vary between −$0.38M (net cost) and $824.5M, and the benefits from the extension of year limit can vary between $133M and $563M.

Distributional analyses

Business and consumer impacts: Given that the expected costs of phasing out non-normalized tank cars are more than offset by the expected cost savings accrued to shippers of TIH substances from the extension to the service life, together the two updates are not expected to impose undue financial costs to rail shippers. Similarly, no impacts on consumers are expected.

Regional impacts: Since anhydrous ammonia is mainly used as a fertilizer in crops, the shippers operating in the Prairies are expected to incur most of the compliance costs for replacing anhydrous ammonia tank cars. The distribution of costs for shippers of chlorine and other TIH substances is expected to be spread more evenly across regions.

"One-for-One" Rule

The "One-for-One" Rule will apply, as there is an administrative burden imposed on rail shippers from the written notifications required for the OTMAs of overloaded railway vehicles. This requirement is considered an "IN" under the "One-for-One" Rule.

The increase in administrative burden includes a total of 50 notifications per year, each taking about one hour to complete and submit. Assuming that in a single year, each notification will be submitted by a different business, the annualized costs of this administrative burden are estimated to be about $860, or $17 per business (in 2012 Can$).

Small business lens

The small business lens does not apply to this amendment, as none of the businesses that will be affected are small businesses. The amendment will therefore produce no costs for small businesses.

Consultation

The standard was developed through the TP 14877 Consultative Committee. Committee members were responsible for commenting and making recommendations on matters related to tank cars used in transporting dangerous goods by rail. The TP 14877 Consultative Committee comprised key stakeholders with extensive knowledge and expertise in various aspects of dangerous goods rail transportation. The Committee included stakeholders who are directly impacted by the standard and would bear the costs of any changes. Its members represent over 25 organizations who are either manufacturers of dangerous goods, shippers, tank car manufacturers, railroad associations, industry associations, the Canadian or the U.S. government.

On February 26, 2016, TC issued a public notice informing the public that it had started the process for updating TP 14877 and was seeking proposals for consideration in the development of the revised standard. This notice was sent to internal and external stakeholders and was posted on TC's website. Thirty days were provided to the public to submit proposals. TC received 24 submissions from a mix of industry associations, manufacturers and government. On April 30, 2016, the Committee reviewed the comments which were organized into 51 proposals and provided feedback.

The Committee met in May, September and November of 2016 to discuss the development of the revised standard. The meetings took place in person and via telephone conference. These meetings were vital in drafting the standard as TC incorporated comments from the Committee into the final draft of the standard.

Upon completing the final draft of the standard, on March 31, 2017, Transport Canada issued another notice to internal and external stakeholders and posted on its website to share the contents of the draft standard and requested feedback. Stakeholders were given 30 days to provide comments. In addition, this notice was sent to the members of the Transportation of Dangerous Goods General Policy Advisory Council (GPAC) and the Federal-Provincial/Territorial Task Force on the Transportation of Dangerous Goods. Transport Canada received seven submissions from a mix of industry associations and manufacturers with the majority of the comments supporting the initiative.

The main issues raised during the consultation process were

- the mandatory use of normalized steel for tank cars transporting TIH substances; and
- the mandatory use of an enhanced Class 111 tank car for Packing Group I and II substances (excluding flammable liquids and TIH substance).

Some stakeholders did not support the normalized steel requirement and from a technical perspective did not agree with the merits of normalized steel. However, they acknowledged that both Canadian and U.S. governments were moving in this direction. TC originally proposed the mandatory use of normalized steel in the head and shell of tank cars used to transport TIH substances to take effect one year after the coming into force of this amendment. However, stakeholders expressed that it would be difficult for industry to comply with this timeline. Acknowledging these concerns, the requirements will come into force on July 2, 2021.

Canadian shippers raised concerns with regards to the phase-out of the legacy tank car TC 111 for dangerous goods in packing groups I and II (excluding flammable liquids and TIH substances). Stakeholders expressed that the phase-out causes undue burden for cross-border shipments. However, it is important to note that the Transportation Safety Board has repeatedly and openly raised concerns on the risks in using legacy TC 111 tank cars for the transportation of dangerous goods. It was originally proposed that Packing Group I and II substances (excluding flammable liquids and TIH substances) must be transported in enhanced Class 111 tank cars if they were built after January 15, 2015. However, as a result of the consultation process, TC provided stakeholders with additional time to adjust to the requirement. Acknowledging stakeholder concerns, Packing Group I and II substances (excluding flammable liquids and TIH substances) must now be transported in enhanced Class 111 tank cars if they were built after October 1, 2015.

At the start of the standard development, TC proposed to increase the rollover test speed from 9 mph to 12 mph for TIH top fitting protection which was based on findings from a study conducted on tank car top fittings protection. However, the Committee expressed concerns over increasing the requirement as they felt that there was a lack of evidence to suggest that the current rollover speed was inadequate. The Committee recommended that further study was needed prior to making a decision on increasing the speed. As a result, no changes to the rollover speed were made.

TC also proposed to revise the minimum test pressure requirements for dissolved gases. However, the Committee decided to postpone this proposal until the next standard update as this subject requires more study as well.

Regulatory cooperation

In developing the standard, TC held ongoing discussions with U.S. regulators to ensure regulations are harmonized where appropriate and to increase coordination between the two countries. For the most part, the proposed changes are consistent with the objective of the Canada–U.S. RCC, which is to improve Canada–U.S. regulatory approaches to make it easier for industry to do business for both countries. However, a few minor misalignments between the requirements of the two countries exist for transporting TIH commodities.

For instance, there will be a period of misalignment for phasing out non-normalized steel for TIH tank cars. Canada's phase-out date is two years after the coming into force of this amendment. As indicated in the Pipeline and Hazardous Materials Safety Administration's (PHMSA) acceptance letter[8] to the AAR, the U.S. government is currently undergoing their review of phasing out normalized steel. TC expects that the U.S. implementation date will occur before Canada's phase-out date. Despite a relatively short period of misalignment, both countries are heading in the same direction of prohibiting non-normalized steel tank cars for TIH transport.

Recognizing that Canada imports less than 1% of its anhydrous ammonia and chlorine and that only a small portion of the U.S. and Canadian fleet is non-normalized, this short period of misalignment is not expected to negatively impact cross-border movements of TIH commodities. In the event of the U.S. indefinitely delaying the phase-out of non-normalized tank cars, these cars could still be used to ship TIH commodities in Canada but they would not be able to continue in Canada beyond the first stop. They could also be used to service U.S. domestic shipments.

Another minor misalignment will exist with DOT 130/131 tank cars being permitted for TIH transport in the U.S., but not permitted in Canada. These tanks cars are more expensive to build as they have a wider operating test pressure range which allows for the carrying of an expanded range of products. This misalignment has negligible implications for cross-border transportation because currently, only a handful of these units are in service in the U.S. carriers and shippers will need to apply for equivalency certificates for travel within Canada. Since there are so few of these units, TC expects that the U.S. shippers could use them only for their domestic shipments. TC will monitor the growth of DOT 130/131, and if the DOT 130/131 becomes adopted more widely, TC is willing to revisit this issue to better align Canada–U.S. regulatory approaches to facilitate cross-border trade. In the meantime, equivalency certificates can be issued to accept these cars into Canada.

The United Nations develops Model Regulations to encourage the uniform development of national and international transportation of dangerous goods requirements. The Model Regulations are widely accepted internationally, and form the basis of several international agreements and national regulatory regimes (as well as that of the European Union). The list of special provisions were updated to reflect the 19th edition of the UN Model Recommendations.

Rationale

The TDGR required updating to reflect the changes made to the 2018 edition of TP 14877. Currently, the TDGR incorporates by reference the 2013 version of the standard. With this amendment the 2018 version of TP 14877 will be incorporated by reference.

This amendment will have a positive impact on Canadians, rail shippers and on trade, and is not expected to impose undue financial costs to rail shippers or consumers. The estimated net benefits are $191.9M.

Since there will be no change in compliance promotion, regulatory administration, inspection, and enforcement activities as a result of this amendment, the costs to Government from this amendment are negligible.

Tank car safety

Canadians will benefit from more stringent requirements for transporting TIH commodities by rail. TIH leaks can cause severe harm to the human health of nearby populations, to the infrastructure, as well as to the natural environment. In addition, leaks of TIH substances can force the evacuation of nearby residents and disrupt rail traffic for some time, which can temporarily harm economic activity. The replacement of non-normalized tank cars by normalized units will reduce the likelihood of a fracture thereby preventing potential leaks of TIH substances in the surrounding environment which provides a number of benefits to Canadians. These benefits are estimated to be $22.45M.

8 U.S. DOT P-1646 acceptance letter: https://www.regulations.gov/document?D=PHMSA-2015-0041-0002.

Prior to this amendment, the service life for using interim TIH tank cars was only 20 years compared to the standard 50-year service life prevailing in the U.S. The time limit of 20 years created a disincentive for Canadian shippers to renew their tank car fleets with newer models that have more reliable, cutting-edge specifications. In addition, research on TIH tank car design indicates that there is no viable design that would represent a significant improvement over the interim standard. This change is also consistent with the 49 CFR in which the interim TIH tank car standard was changed to the permanent standard on September 18, 2017. The extended service life of these tank cars will provide rail shippers with an estimated benefit of $187.3M.

Alignment with other jurisdictions

Railway shippers will benefit from having consistent requirements between Canada and the U.S. for OTMAs of overloaded tank cars. Although the requirements will be the same, the written submission process slightly differs as U.S. DOT has an electronic form while TC's form is still under development. However, the U.S. DOT form will be accepted by TC. The written approval requirement will also provide TC with an opportunity to collect data on what commodities are being overloaded, who is overloading the tank cars, the frequency, and routes of overloaded tank cars. This data will help TC identify trends and take proactive measures to improve safety. Requiring written approvals for overloaded tank cars will also provide TC with a mechanism to control the flow of overloaded tank cars.

Exemption from prepublication

Following the publication of the standard, TC received strong stakeholder support for this amendment. Stakeholders indicated to TC that they have been appropriately and thoroughly consulted and were provided several opportunities for submitting comments and proposing updates to TP 14877. Industry communicated that they favour an expedited adoption of the standard as delays will cause unintended misalignment with the regulations in the U.S. Lastly, since standards are typically updated on a five-year basis, work on the next update will be starting in 2019. Without this adoption, much of the work that was completed by the TP 14877 Consultative Committee would need to be repeated if the 2018 edition has not come into force by then.

Implementation, enforcement and service standards

The proper implementation of regulatory amendments is a key aspect of the regulatory life cycle. Once regulatory amendments become law, the TDG Directorate develops new training and awareness material for inspectors and stakeholders. New regulatory requirements are disseminated using a communication network that is already well established. Some of the main tools used to implement regulatory changes are the following:

- TC's webpages are updated on a regular basis with various communication products, as well as specific sections for awareness material (e.g. frequently asked questions, alerts, advisory notices and bulletins). Upon adoption of this amendment, notices and additional guidance material to help stakeholders comply with the requirements will be posted on the TC website.
- The TDG General Policy Advisory Council, composed of over 40 different industry associations, meets twice annually to discuss issues affecting stakeholders and advise the Minister of Transport. During these meetings, TC consults stakeholders and provides information and updates on regulatory amendments that are proposed or that have come into force. Industry is aware of this amendment to the TDGR.
- The Multi-Association Committee on TDG is a committee that provides a forum for industries to discuss questions of interest on the subject of the transport of dangerous goods. TC is invited to participate and provide clarification on regulatory and enforcement issues. This forum is also a good opportunity for the distribution of information about compliance with new regulatory requirements. Updated information about the proposed amendments will be provided to this committee.
- The TDG Newsletter is published semi-annually and is distributed to over 23,000 readers in Canada and abroad. It is available free of charge on the TDG website. Proposed regulatory amendments and updates are published in the TDG Newsletter regularly.

Compliance and enforcement

Compliance with the TDG Act and the TDGR is verified through inspections. These inspections are carried out across the country. The implementation objective is to update and enhance inspector training tools to ensure that oversight is undertaken by properly trained staff. This amendment is anticipated to have a neutral effect on TDG inspectors, as the number of inspections and the time required to conduct the inspections are not expected to change significantly. Information will be provided to them to keep them updated and aware of the new requirements.

Depending on the severity of the non-compliance and its associated level of risk, consequences for non-compliance can include a notice of infraction, detention of dangerous goods, fines up to $50,000 for a first offence and up to $100,000 for subsequent offences, and/or imprisonment of up to two years.

The coming-into-force date for the normalized steel requirement for TIH tank cars was delayed to two years after the coming into force of this amendment to give stakeholders sufficient time to adapt. The remaining changes will immediately come into force as outlined in Table 7.

TABLE 7
Mandatory compliance dates

Requirement	When does it come into effect?
Normalized steel for head and shell of tank cars transporting TIH substances	July 2, 2021
Enhanced Class 111 tank car for transporting Packing Group I and II substances (excluding flammable liquids and TIH substances)	July 2, 2019, but it only applies to cars built after October 1, 2015
All other changes, including the following: Interim TIH tank car standard changed to permanent TIH tank car standard. Service life of TIH interim tank car extended from 20 years to 50 years. Provisions for the one time movement of non-conforming containers presenting low safety risks.	July 2, 2019

Notes

Regulatory Impact Analysis Statement

Emergency Response Assistance Plan

(This statement is not part of the Regulations.)

Issues

On July 6, 2013, a 73-car train from Montreal, Maine & Atlantic Railway carrying crude oil rolled away from its parked location and derailed in downtown Lac-Mégantic. This disaster caused 47 fatalities and destroyed the core of Lac-Mégantic. Among other improvements needed to the Transportation of Dangerous Goods Program, the Lac-Mégantic disaster pointed to the need to improve emergency preparedness and response to dangerous goods incidents.

In April 2014, the Minister announced the creation of the Transportation of Dangerous Goods Emergency Response Task Force (ERTF). The membership of the ERTF included carriers, industries, emergency response contractors, first responder groups including First Nations, provinces/territories, municipalities, as well as Transport Canada (TC) and other federal government departments. In addition to its focus on improving public safety of incidents involving flammable liquids transported by rail, the ERTF also had the mandate to make recommendations for improving the Emergency Response Assistance Plan (ERAP) program. An ERAP is a plan that describes the actions to be taken in the event of a release or anticipated release of higher risk dangerous goods while in transport. In July of 2016,[2] the ERTF submitted its final report which presented 40 recommendations. Ten of these recommendations were related to improving the ERAP program and seven of these are addressed in these amendments.

Background

In Canada, the transportation of dangerous goods is regulated under the *Transportation of Dangerous Goods Act, 1992* (TDG Act), the *Transportation of Dangerous Goods Regulations* (TDG Regulations), and standards incorporated by reference into the TDG Regulations. The TDG Act and TDG Regulations comprise the regulatory framework for the ERAP program.

The TDG Act requires any person importing or offering for transport certain higher risk dangerous goods (for example chlorine, propane, crude oil) in quantities specified by the TDG Regulations to have an approved ERAP. In cases where no person is importing or offering for transport, persons handling or transporting these dangerous goods require an ERAP.

The scale of transportation incidents involving the release or anticipated release of dangerous goods and the danger they present require a different approach and strategy than most local authorities are trained to deal with. An ERAP is intended to assist emergency responders by providing them with specialized expertise, equipment, or response teams when needed. It also ensures that the risks associated with transporting these dangerous goods are well understood, and that appropriate measures are in place.

Between 2007 and 2017, TC recorded approximately 360 transportation incidents involving the implementation of an ERAP. There are currently over 1,000 ERAPs approved by the Minister covering nearly 400 dangerous goods.

A number of recommendations from the ERTF were related to improving the ERAP program. These recommendations focused on clarifying the processes for implementing an ERAP and collecting meaningful data to foster the continuous improvement of the ERAP program.

2 Transport Canada, *Emergency Response Task Force, Final Report and Recommendations – Comprehensive Strategy for Improving TDG Incident Response in Canada,* 2016.

Objective

The primary objectives of the *Regulations Amending the Transportation of Dangerous Goods Regulations (Emergency Response Assistance Plan)* are to address the recommendations of the ERTF to improve the ERAP program and enhance public safety in the event of an incident during the transportation of dangerous goods. These objectives support the overall strategy to promote a safe, secure and efficient transportation system that contributes to Canada's economic development and security objectives.

Description

These amendments will

- clarify ERAP implementation;
- enhance emergency preparedness and response; and
- make administrative changes (housekeeping).

1. Clarifying ERAP implementation

Initial notification through ERAP incident report

An "ERAP incident report" must now be made as soon as possible in the event of a release or anticipated release of dangerous goods that require an ERAP. The ERAP incident report is a mandatory notification made by the person who has the charge, management or control of the dangerous goods to the person who has the ERAP.

Responsibility for ERAP implementation

Under these amendments, the person with the ERAP is responsible for implementing the plan. An ERAP must be implemented when there is a release or anticipated release that endangers or could endanger public safety.

ERAP telephone number

These amendments clarify that calling the ERAP telephone number does not automatically trigger an ERAP implementation and state that a person identified in the ERAP can be reached at any time while the dangerous goods are in transport.

Tiered response levels

In these amendments, two response tiers are introduced, based on the level of response needed to address the release or anticipated release of dangerous goods.

A person who implements an ERAP to tier 1 must

- provide technical or emergency response advice as soon as possible after a request for advice; and
- remotely monitor the response to the release or anticipated release.

A person who implements an ERAP to tier 2 must

- provide technical or emergency response advice as soon as possible after a request for advice;
- monitor the response to the release or anticipated release; and
- send ERAP emergency response resources to the location of the release or anticipated release.

ERAP implementation report

With these amendments, each time an ERAP is implemented to tier 1 or tier 2, an ERAP implementation report must be made by the person listed in the ERAP to the Canadian Transport Emergency Centre (CANUTEC) at 1-888-CANUTEC (1-888-226-8832) or 613-996-6666 as soon as possible.

2. Enhancing emergency preparedness and response

Additional ERAP application requirements

Additional ERAP requirements were added to better reflect the information needed to review ERAP. A copy of the plan and a potential incident analysis must be included with the ERAP application.

The "potential accident assessment" is renamed "potential incident analysis" and requires the analysis of at least four scenarios for dangerous goods included in the ERAP. The scenarios must include

- an anticipated release;
- the release of less than 1% of dangerous goods in a means of containment;
- the release of more than 50% of the dangerous goods in a means of containment; and
- the exposure to fire of a means of containment that contains dangerous goods.

For each scenario, the following is required:

- the potential consequences of the release or anticipated release;
- the measures, organized by tier, to be taken to respond to the release or anticipated release for each scenario; and
- the identification of the persons responsible for taking the actions.

Specifying who needs an ERAP

Persons who "handle" or "transport" dangerous goods exceeding the quantities specified in the TDG Regulations are also subject to the requirements of an ERAP, should there be no one who is "offering for transport" or "importing" the dangerous goods.

Other amendments (housekeeping)

Authorized users

A person with an approved ERAP may allow another person to use their plan, so that the second person (authorized user) will not need to apply for approval provided that

- the authorized user is not the producer of the dangerous goods to which the ERAP relates;
- the ERAP applies to the dangerous goods, the mode of transport, the means of containment and the geographical area in which the dangerous goods will be in transport;
- the person who authorizes the use of the ERAP agrees to respond to a release or anticipated release of the dangerous goods to which the ERAP relates; and
- the person who received approval for the ERAP provides a written authorization to the authorized user before the information is entered on the shipping document.

These amendments simplify the authorization process, as there is no longer a need to notify TC when an authorization to use an ERAP is given or rescinded. However, the authorized user must now show proof of their authorization to use the ERAP, when requested by TC.

Infectious substances

Under these amendments, any quantity of dangerous goods that are Risk Group 4 human pathogens within the meaning of the *Human Pathogens and Toxins Act* (HPTA) must have an ERAP. As a result, an ERAP will no longer be required for foot and mouth disease virus (FMDV) and Variola (smallpox virus) because they are not Risk Group 4 human pathogens within the meaning of the HPTA.

Definition of residue

The term "residue" is now defined as "the dangerous goods remaining in a means of containment after its contents have been emptied to the maximum extent feasible and before the means of containment is either refilled or cleaned of dangerous goods and purged to remove any vapours."

Table of quantity reporting

Outside the requirements of an ERAP, an emergency report must be made to local emergency response authorities if there is a release or anticipated release of dangerous goods exceeding the quantities specified in the "Table of quantity for reporting" in Part 8 (Reporting) of the TDG Regulations. This table was corrected to reflect that dangerous goods in Class 3, 4, 5, 6.1 or 8 without an assigned packing group are also subject to the reporting requirements. Previously, these substances were mistakenly excluded.

Terminology for "ERAP implementation"

The term "activate," with respect to an ERAP, is replaced with "implement" to align with the terminology used in the TDG Act.

Changes to shipping document

These amendments require "ERAP" or "PIU" to be included before or after the ERAP number on a shipping document. The term "ERP" can no longer be used on a shipping document.

"One-for-One" Rule

The "One-for-One" Rule applies, as there is an administrative burden imposed on industry. For example, businesses with ERAPs will need to re-submit their revised ERAP applications; they will need to notify TC when an ERAP is implemented to tier 1 or tier 2. Overall, the proposed amendments would constitute an "IN" as the net administrative burden costs are higher than the reductions.

Administrative burden costs — summary table

Proposed Element	Assumptions (Wages in 2012 dollars)	In/Out	Annualized Value (Over 10 years)
ERAP implementation report	48 reports submitted every year × 30 minutes per report × wage rate of $70 per hour	In	$1,042
Specifying who needs an ERAP	20 applications submitted every year × 1 hour per application × wage rate of $38.67 per hour	In	$486
Additional ERAP application requirements	106 applications submitted in the first year × 1 hour per application × wage rate of $175 per hour	In	$11,574
Infectious substances — removal of foot and mouth disease virus	1 ERAP × 0.25 hour × wage rate of $70 per hour	Out	($11.57)
Total			**$13,090**

These amendments result in a net administrative burden cost increase of $13,090 (annualized in 2012 dollars using a 7% discount rate and base year 2012).

Small business lens

These amendments will not result in nationwide cost impacts greater than $1 million annually, and they will not result in costs for small businesses that are disproportionately high. The small business lens will therefore not apply to these proposed amendments.

Consultation

Comments received prior to publication of the proposed Regulations in the *Canada Gazette*, Part I, on June 30, 2018

The recommendations from the ERTF's final report in 2016 served as the basis for the key elements of these amendments. Following the submission of the ERTF final report, TC analyzed the recommendations and developed a consultation document laying out policy proposals to be implemented. This consultation document was posted online for comment from March 17, 2017, to May 1, 2017. Key stakeholders, including all those with an approved ERAP, were notified of the consultations by email. Twenty-nine comments were received by email or uploaded to the consultation website during this period. Comments were submitted by industry associations, the chemical and petroleum industry, trucking and rail transportation companies, manufacturers, persons with approved ERAPs, as well as provincial and municipal organizations.

TC also held a consultation by teleconference with the Emergency Response Sub-Committee of the Transportation of Dangerous Goods General Policy Advisory Council (GPAC) on April 25, 2017. In addition, the proposed policy was presented to GPAC at semi-annual meetings in May 2017 and November 2017.

Following these consultations, TC considered the comments received to draft the proposed Regulations for prepublication to the *Canada Gazette*, Part I.

Some stakeholders questioned how coordination of incident response would take place within a tiered response level approach. TC supports the Incident Command System (ICS) approach, which was recommended by the ERTF. TC encourages stakeholders to become familiar with the ICS and to use the ICS Canada program[3] to ensure coordination of ERAP responses. ICS is a system where multiple authorities and response organizations are integrated into a common organizational structure designed to improve emergency response operations. Regardless of the response tier implemented, resources under the ERAP would complement and engage in the existing ICS structure.

Comments received following prepublication of the proposed Regulations in the *Canada Gazette*, Part I, on June 30, 2018

The proposed Regulations were prepublished in the *Canada Gazette*, Part I, on June 30, 2018, and were followed by a 60-day comment period. During that period, TC received 23 submissions representing manufacturers, carriers, distributors, the agriculture sector, the oil and gas sector, industry associations, municipal and provincial governments and other industries. Although the majority of stakeholders support TC's primary objectives to improve the ERAP program and enhance public safety, the following concerns were raised most frequently during this comment period.

Repealing requirement for authorized users

TC received seven submissions from stakeholders with concerns about repealing the requirement for a written authorization when an ERAP is used by another person. Stakeholders were concerned about unauthorized use of their ERAP (i.e. another company using their ERAP without their consent). Recognizing these concerns, TC added a requirement that when requested by TC, authorized users must provide a copy of their authorization to use another person's ERAP.

3 The Incident Command System Canada is a network of organizations working cooperatively to maintain a standard Incident Command System. ICS Canada member agencies include Alberta Emergency Management Agency, Manitoba Office of the Fire Commissioner, Nova Scotia Emergency Management Office, PEI Emergency Measures Organization, Search and Rescue Volunteers Association of Canada, Ground Search and Rescue Council of Canada.

Shipping documents

Six comments were sent to TC with concerns over the additional information required to be on the shipping document. Many stakeholders stated that this added no safety benefit and could be very costly and administratively burdensome. Acknowledging these concerns, TC removed the requirement for the additional information on shipping documents related to the name of the person whose ERAP was approved.

Although some stakeholders did not see value in changing "ERP" to "ERAP," TC considers this change to be an important safety issue. The "ERP" acronym is outdated and is often confused with other emergency response plans which are not subject to the same requirements of an ERAP. Removing "ERP" from the shipping document will help emergency responders distinguish between an ERAP and emergency response plans from other organizations, such as carriers and local or provincial authorities.

Providing technical or emergency response advice within 10 minutes

TC received eight submissions opposing the proposed requirement that a person who implements an ERAP must provide technical or emergency response advice within 10 minutes of a request. Stakeholders indicated that this 10-minute requirement was not realistic in all situations. Recognizing the need to ensure that appropriate advice is provided quickly, some stakeholders recommended to put the 10-minute timeframe as a guideline. TC acknowledges that in some cases, 10 minutes may not be reasonable and has changed this requirement to "as soon as possible."

Tiered response levels

TC received four submissions proposing to revert to the three tiered response model for ERAP implementation, recommended by the ERTF. The three tiered model included timelines classified in three tiers: providing technical or emergency advice within 10 minutes (tier 1), technical advisor to attend to incident scene within 6 hours (tier 2) and response team and equipment to arrive at scene within 12 hours (tier 3).

These comments were considered. However, TC maintained the two-tiered response model. Circumstances during a release or anticipated release of dangerous goods can greatly vary, and the implementation of an ERAP must follow a clear and simple model relevant to all industries. The addition of a third tier does not provide added safety benefits. Timelines associated with the three-tiered model proposed by the ERTF will be incorporated in guidance material.

Transition period

Eight submissions were sent to TC opposing the six-month transition period. A 12-month transition period was suggested by some stakeholders, stating that these amendments may require significant changes and present challenges to comply. In consideration of these comments along with TC's decision to remove the requirement for adding authorized user information to the shipping documents, TC changed the transition period to nine months. This will provide stakeholders an additional three months to adjust to the regulatory requirements. A 12-month transition period would further delay benefits to safety and would delay TC's ability to collect meaningful data to improve the ERAP program. Also, given that the 12-month transitional period was requested from some stakeholders for the requirement relating to the additional information on the shipping document, TC has determined that 9 months would provide an appropriate balance between achieving safety objectives and accommodating the implementation of the new regulatory requirements.

Costing estimates

Six comments suggested that the wage rates and time estimates used to calculate the costs associated with these amendments were underestimated. Comments also indicated that the costing estimates did not capture the full extent of the changes required to make modifications to shipping documents. Following these concerns, TC contacted stakeholders who expressed that the estimates were too low and requested more information. Five stakeholders provided estimates, which were taken into consideration in revising the wage rates for consultants, internal ERAP writers, and technical advisors as well as costs required to update shipping documents. As a result, the overall estimated costs for these amendments were increased with significant increases made to the estimates related to updating shipping documents. The revised costs are presented in the administration burden costs summary table and the Rationale section.

ERAP telephone number

TC received comments that the wording used to describe the ERAP telephone number was misleading as it implied that the ERAP telephone number is always answered by the person who has the ERAP. TC has modified the wording to correct this.

Guidance material

There was considerable interest for TC to produce guidance material to help stakeholders interpret these amendments. Guides to support the ERAP program and its regulations have been developed. These are based on three themes: determining if you need an ERAP, applying for approval of an ERAP, and having an approved ERAP.

Other consultations

Furthermore, on November 29, 2018, TC presented a summary of what TC heard during the 60-day consultation period and explained considerations in response to these comments to GPAC members. For example, the issues concerning the tiered response levels, shipping documents, transition period, etc., were presented. No further comments were raised concerning the amendment. However, GPAC members raised questions related to the release of the new online system used for ERAP applications. Stakeholders wanted to know if they could continue with the PDF application form, the deadlines for inputting their information in the new online system and what resources TC would provide to help companies learn about the new system.

Regulatory cooperation

When dangerous goods are transported in commerce in the United States, they must be accompanied by emergency response information to help local authorities. However, there is no requirement for a federally approved emergency response assistance plan for mitigating incidents involving the transport of dangerous goods in the United States. Canada's ERAP program is unique and reflects the Government of Canada's principle that emergency management is a shared responsibility.

Aligning the definition for "residue" with the definition in the U.S. Department of Transportation *Hazardous Materials Regulations* — Title 49 of the *Code of Federal Regulations* (49 CFR) will help ensure consistency and ease cross-border trade for containers with residual amounts. Prior to these amendments, some of the ERAP requirements for shipments containing residual amounts caused some confusion.

Rationale

The Lac-Mégantic disaster pointed to the need to improve emergency preparedness and response of dangerous goods incidents to the Transportation of Dangerous Goods program, which these amendments address. These amendments are necessary to improve public safety during the transportation of certain higher risk dangerous goods and cover 7 out of 10 recommendations related the ERAP program made by the ERTF. These included, for example, clarifying the process of implementing an ERAP, including response tiers and collecting meaningful data for continuous improvement of the ERAP program. Through activities outside of the proposed amendments, TC has already addressed the remaining ERTF recommendations. These amendments support the overall strategy to promote a safe, secure and efficient transportation system that contributes to Canada's economic development and security objectives.

The total present value costs to stakeholders from these amendments are estimated to be $2,776,496 over the 10-year analytical timeframe. The annualized costs to stakeholders are estimated to be $395,310. Both of these values, as well as all other values listed in the Rationale section, are presented in 2012 dollars using a 7% discount rate with a 2019 base year.

1. Clarifying ERAP implementation

Initial notification through an ERAP incident report

Prior to these amendments, any form of notification by the person who has charge, management or control of dangerous goods requiring an ERAP was not mandatory. When a transportation of dangerous goods incident that endangered or could endanger public safety took place, there was a need to determine whether or not an ERAP needed to be implemented. The addition of an ERAP incident report will ensure that the person with the ERAP has the pertinent information necessary to make a timely and informed decision on whether to implement the plan and to what response tier.

It is estimated that approximately 48 additional ERAP incident reports will be made per year under the amendments, with an overall present value cost to industry of $15,534 over 10 years.

Responsibility for ERAP implementation

Before these amendments, the process to implement an ERAP or who was responsible for implementing the plan was unclear. This confusion was also highlighted by the ERTF. These amendments specify that the person with the ERAP is responsible for implementing the ERAP. This person is often the most aware of how the plan can be implemented and how it can be used to effectively respond to a release or anticipated release.

These amendments would result in negligible costs.

ERAP telephone number

Previously, it could have been misinterpreted that calling the ERAP telephone number (previously referred to as the activation telephone number) listed on the shipping document would automatically trigger an ERAP implementation. These amendments clarify that an ERAP is implemented by the person with the ERAP and that any person can call the ERAP telephone number to receive technical or emergency response advice, without automatically triggering implementation of the plan. The person identified in the plan must be reached at the ERAP telephone number at any time while the dangerous goods that require an ERAP are in transport.

These amendments would result in negligible costs.

Tiered response levels

Prior to these amendments, how or what it meant to implement an ERAP was unclear. Tiers of response, based on two of the ERTF's recommendations, are included in these amendments to distinguish between responding remotely (tier 1) or on site (tier 2). Implementing a plan does not necessarily mean that emergency response resources found in an ERAP have to be sent to the site of the release or anticipated release. The tiered response model ensures that a release or anticipated release is being monitored by the person who has the ERAP, whether remotely or on site. It also ensures that when an ERAP is implemented, regardless of the tier, technical or emergency response advice must be provided as soon as possible, when requested.

It is expected that the addition of response tiers would result in negligible costs.

ERAP implementation report

Prior to these amendments, there was no requirement to inform the Minister when an ERAP was implemented. This hindered TC's ability to effectively monitor the response to a release or anticipated release and intervene if an ERAP was not being implemented effectively. The ERAP implementation report will also provide an opportunity for CANUTEC to provide advice, when needed. Additionally, the report provides TC with a means of tracking ERAP implementations and evaluating whether an ERAP response was timely, appropriate, safe and coordinated.

It is expected that an implementation report to CANUTEC would be at most 30 minutes in length. Costs associated with the ERAP implementation reporting are expected to be low with an estimated present value cost of $11,748 over the 10-year period.

2. Enhancing emergency preparedness and response

Additional ERAP application requirements

The additional ERAP application requirements set out in these amendments will ensure that applicants have appropriate equipment, personnel, capabilities and agreements with third parties, where applicable, for response. The information provided through these requirements will facilitate the review of ERAP applications so that TC can ensure that the plan can be implemented and will be effective at responding to a release or anticipated release. The additional requirements will also provide TC with information to help monitor the effectiveness of the ERAP program and foster continuous improvement.

Prior to these amendments, the potential accident assessment only required a general analysis of how a release or anticipated release could occur, a general description of the potential consequences and the response actions to be taken by the applicant. Requiring applicants to describe their response to four different scenarios using a potential incident analysis will help them plan and gain a comprehensive understanding of what is involved in a response using their ERAP. Persons who are more prepared and aware of the consequences following incidents with their dangerous goods can better understand their role, resulting in a more efficient implementation of the ERAP and overall response.

Since persons with approved ERAPs were already required to renew their ERAPs, it is expected that they would, on average, need an additional 10 hours to supplement their ERAP to meet the requirements of these amendments. Therefore, it is estimated that approximately 106 persons would be updating their ERAPs per year[4] with an overall estimated present value cost to the industry of $1,305,370 over 10 years.

4 It is assumed that ERAPs are renewed every five years.

Specifying who needs an ERAP

Prior to these amendments, some people seemed to think that an ERAP would not be required for persons who "handle" or "transport" dangerous goods. These amendments will align the Regulations with the TDG Act by adding that persons who "handle" or "transport" dangerous goods in quantities specified in the TDG Regulations are also subject to the ERAP requirements, should there be no one in Canada who is offering for transport or importing the dangerous goods.

TC currently has over 1,000 ERAPs and these amendments are expected to yield a 10% increase, or approximately 100 more ERAP applications in the first year. However, there is a possibility that some of these persons, such as carriers, may seek to be authorized users rather than create their own ERAP and apply for approval, which would reduce the costs of compliance. The average length of time it takes to collect information and complete an ERAP application is estimated to be 30 hours. The estimated cost to prepare an ERAP is based on third-party fees, which are estimated at $175 per hour. Based on the hourly fee and an ERAP renewal rate of once every 5 years, the total present value costs are estimated to be $744,061 over the 10-year period.

3. Other amendments (housekeeping)

A number of minor updates, corrections and changes were made to improve the readability of the TDG Regulations and help stakeholders comply with the Regulations. Definitions have been updated to reflect current practices in the transportation of dangerous goods. In addition, changes have been made to align the terminology between the TDG Act and the TDG Regulations. For instance, the ERTF noted that the circumstances and meaning of "activation" have been raised as problematic and unclear. These amendments will align with the TDG Act by replacing the term "activate" with "implement," as there are no references to the activation of an ERAP in the TDG Act.

Replacing "ERP" with "ERAP" on the shipping document may result in a wide range of costs for businesses. Some businesses already have "ERAP" on their shipping document and will not need to alter their shipping documents. Other businesses will need to add an "A" to "ERP." Depending on the complexity of the shipping document system in place, a simple change of adding a character to the shipping document may require minimal costs for some, while other stakeholders may require significant IT resources to change the design and format of shipping documents. The costs for businesses with an ERAP range from $0 to $10,000. Overall, this change to the shipping document is estimated to cost $563,766 (present value) to industry.

Infectious substances

Prior to these amendments, infectious substances requiring an ERAP were listed by name in the TDG Regulations. To ensure that existing and emerging high risk pathogens are captured within the ERAP requirements, infectious substances within the meaning of Risk Group 4 human pathogens of the HPTA now require an ERAP. This implies that an ERAP would no longer be required for FMDV and smallpox virus, as they are not Risk Group 4 human pathogens within the meaning of the HPTA. The Canadian Food Inspection Agency (CFIA) is the only entity that may transport FMDV and has their own emergency response plan for all biological shipments in transit. The smallpox virus is a prohibited human pathogen under the HPTA and, as a result, transportation of the smallpox virus is forbidden. Therefore, there is no need for an ERAP for the smallpox virus.

These amendments would result in estimated present value cost savings of $131.

Implementation, enforcement and service standards

These amendments will come into force on June 1, 2019. Businesses will have a transition period of nine months to comply with the new regulatory requirements.

The proper implementation of regulatory amendments is a key aspect of the regulatory life cycle. Once regulatory amendments become law, the Transportation of Dangerous Goods Directorate will develop new training and awareness material for inspectors and stakeholders. New regulatory requirements will be disseminated using a communication network that is already well established. Some of the main tools used to implement regulatory changes are the following:

- The Department's web pages are updated on a regular basis with various communication products, as are specific sections for awareness material (e.g. Frequently Asked Questions, Alerts, Advisory Notices and Bulletins). Upon adoption of these amendments, notices and additional guidance material to help stakeholders comply with the requirements will be posted on the TC website.
- The Transportation of Dangerous Goods (TDG) General Policy Advisory Council is a group composed of over 40 different industry associations, which meets twice annually to discuss issues affecting stakeholders and advise the Minister. During these meetings, TC consults stakeholders and provides information and updates on regulatory amendments that are proposed or that have come into force. Industry is aware of these amendments to the TDG Regulations.
- The Multi-Association Committee on TDG is a committee that provides a forum for industries to discuss questions of interest on the subject of the transport of dangerous goods. TC is invited to participate and provide clarification on regulatory and enforcement issues. This forum is also a good opportunity for the distribution of information about compliance with new regulatory requirements. Updated information about the proposed amendments would be provided to this committee.
- The TDG Newsletter is published semi-annually and is distributed to over 23,000 readers in Canada and abroad. It is available free of charge on the TDG website. Proposed regulatory amendments and updates are published in the TDG Newsletter regularly.

Compliance with the TDG Act and the TDG Regulations is verified through inspections. These inspections are carried out at the federal level and the provincial/territorial level and involve all persons involved in the transportation of dangerous goods. These amendments will assist TDG inspectors and Remedial Measures Specialists (inspectors who specialize in ERAPs) in verifying compliance with the requirements of the TDG Act and TDG Regulations regarding ERAPs. Information will be provided to these inspectors to keep them updated and aware of the requirements.

The TDG Act requires any person importing or offering for transport certain dangerous goods in quantities specified by the TDG Regulations to have an approved ERAP. In cases where no person is importing or offering for transport, persons handling or transporting these dangerous goods require an ERAP. A person who contravenes a provision of the Act could be subject to fines up to $50,000 for a first offence and up to $100,000 for subsequent offences, and/or imprisonment of up to two years.

The TDG Act provides the Minister with the authority to direct a person with an approved ERAP to implement the plan as approved, within a reasonable period, to respond to a release or anticipated release of dangerous goods to which the plan applies. Failing to comply with such direction may result in the ERAP being revoked. Furthermore, in accordance with the TDG Act, the Minister may revoke the approval of an ERAP if

- there are reasonable grounds to believe that there has been a release or anticipated release of dangerous goods to which the plan applies, and the plan was not used to respond;
- the Minister believes on reasonable grounds that the plan cannot be or will be ineffective in responding; or
- changes requested by the Minister deemed necessary to make the plan effective in responding have not been made within a reasonable time or have been refused.

Notes

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Transportation of Dangerous Goods by Rail

Security Regulations

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Transportation of Dangerous Goods by Rail – Security Regulations

Interpretation

Definitions

1 **(1)** The following definitions apply in these Regulations.

Act means the *Transportation of Dangerous Goods Act, 1992*. ***(Loi)***

handling site means a facility connected to a railway line where a railway vehicle is placed for the loading or unloading of dangerous goods. ***(lieu de manutention)***

railway carrier means a person who has possession of dangerous goods for the purposes of transportation by railway vehicle on a main railway line, or for the purposes of storing them in the course of such transportation. ***(transporteur ferroviaire)***

railway loader means ***(chargeur ferroviaire)***

(a) any person that operates a handling site, or

(b) any manufacturer or producer of dangerous goods that has possession of dangerous goods at a handling site for the purposes of loading them prior to, or unloading them after, transportation by rail.

Terminology — *Transportation of Dangerous Goods Regulations*

(2) Unless the context requires otherwise, all other words and expressions used in these Regulations have the same meaning as in section 1.4 of the *Transportation of Dangerous Goods Regulations*.

Notes

PART 1
Rail Security Reporting

Objective

2 This Part sets out security requirements for the purposes of section 5 of the Act.

Potential threats and other security concerns

3 **(1)** A railway carrier must immediately report any potential threat or other security concern by telephone to the Transport Canada Situation Centre. Potential threats and other security concerns include

(a) any interference with a train crew;

(b) any bomb threats, either specific or non-specific;

(c) any reports or discoveries of suspicious items when the report or discovery results in a disruption of railway operations;

(d) any suspicious activities observed on or near a railway vehicle, at or near infrastructure used in railway operations or at or near a facility or location used in railway operations;

(e) the discovery, seizure or discharge of a firearm or other weapon on or near a railway vehicle, at or near infrastructure used in railway operations or at or near a facility or location used in railway operations;

(f) any signs of tampering with a railway vehicle if the railway carrier determines that security has been compromised; and

(g) any information relating to the possible surveillance of a railway vehicle, of infrastructure used in railway operations or of a facility or location used in railway operations.

Contents of report

(2) The report must include, if applicable and to the extent known, the following information:

(a) the railway carrier's name and contact information, including telephone number and email address;

(b) the name of the person who is making the report on behalf of the railway carrier and the person's title and contact information, including their telephone number and email address;

(c) any information that identifies any train that is affected by the potential threat or other security concern, including its itinerary and line or route position;

(d) any information that identifies any railway vehicle, infrastructure, facility or location that is affected by the potential threat or other security concern;

(e) the classification and quantity of any dangerous goods that are involved in the potential threat or other security concern; and

(f) a description of the potential threat or other security concern, including the date and time that the railway carrier became aware of it and the date and time of any incident linked to it.

Notes

PART 2
Rail Security Requirements

General

Objective

4 This Part sets out security requirements for the purposes of section 5 of the Act.

Coordinator

Rail security coordinator

5 **(1)** A railway carrier must, at all times, have an employee designated as a rail security coordinator or an acting rail security coordinator.

Contact information

(2) The railway carrier must provide the Minister with

(a) the name and job title of the rail security coordinator or acting rail security coordinator; and

(b) 24-hour contact information for the rail security coordinator or acting rail security coordinator.

Duties

6 A railway carrier must ensure that the rail security coordinator or acting rail security coordinator

(a) coordinates security matters within the railway carrier's organization; and

(b) acts as the principal contact between the railway carrier, law enforcement and emergency response agencies and the Minister with respect to security matters.

Inspections

Security inspection — railway vehicle accepted

7 **(1)** If a railway carrier accepts a railway vehicle that contains dangerous goods for transport in a train and a placard is required under Part 4 of the *Transportation of Dangerous Goods Regulations*, the railway carrier must carry out a visual security inspection of the railway vehicle when it is accepted for transport and when it is placed in the train.

Security inspection — dangerous goods accepted

(2) If a railway carrier accepts dangerous goods for transport in a railway vehicle in a train and a placard is required under Part 4 of the *Transportation of Dangerous Goods Regulations*, the railway carrier must carry out a visual security inspection of the railway vehicle when it is placed in the train.

Tampering or suspicious items

(3) If a railway carrier that is carrying out an inspection under subsection (1) or (2) discovers signs of tampering or a suspicious item, the railway carrier must take measures to determine whether security has been compromised.

Compromise of security

(4) If the railway carrier determines that security has been compromised, the railway carrier must take measures to address the situation before transporting the dangerous goods.

Notes

PART 3
Security Plan and Training

General

Prescribed persons

8 A railway carrier, or a person who is employed by or is acting directly or indirectly for a railway carrier, is a prescribed person for the purposes of section 7.3 of the Act.

Security Plan and Security Plan Training

Application — security-sensitive dangerous goods

9 **(1)** Sections 10 to 13 apply only to railway carriers that transport and railway loaders that offer for transport or handle any of the security-sensitive dangerous goods set out in Schedule 1.

Precision

(2) For greater certainty, paragraph 10(1)(g) does not apply to railway loaders.

Security plan

10 **(1)** A railway carrier or railway loader is required to implement a security plan that

(a) is in writing;

(b) identifies, by job title, a senior manager responsible for the plan's overall development and implementation;

(c) describes the railway carrier's or railway loader's organizational structure, identifies the departments that are responsible for implementing the plan or any portion of it and identifies every position whose incumbent is responsible for implementing the plan or any portion of it;

(d) describes the security duties of each identified department and position;

(e) sets out a process for notifying each person in a position referred to in paragraph (b) or (c) and who is responsible for implementing the plan or any portion of it that the plan or that portion of it must be implemented;

(f) includes an assessment of the security risks associated with the offering for transport, handling or transport of the dangerous goods set out in Schedule 1 that the railway carrier or railway loader offers for transport, handles or transports;

(g) sets out a process for security inspections referred to in section 7, including

(i) a procedure for conducting security inspections,

(ii) a method for determining whether security has been compromised,

(iii) a method for determining whether additional security inspections are necessary when, given the circumstances, security could be compromised, and

(iv) a method for addressing the situation, if it is determined that security has been compromised;

(h) sets out measures to prevent access by unauthorized persons to the dangerous goods set out in Schedule 1 and to the railway vehicles used to transport those dangerous goods;

10 Security Plan *continued*

(i) sets out measures to verify information provided by candidates for positions that involve access to the dangerous goods set out in Schedule 1;

(j) sets out a policy on limiting access to security-sensitive information and sets out measures for the sharing, storing and destruction of that information;

(k) sets out measures to address other security risks identified in the assessment referred to in paragraph (f);

(l) sets out a program for the security awareness training required under section 14 and the security plan training required under section 11; and

(m) sets out measures to respond to a security incident and for reporting it.

Implementation

(2) The railway carrier or railway loader must

(a) make the most recent version of the security plan or any portion of it available to each person who is responsible for implementing the plan or that portion of it;

(b) review, and if necessary revise, the plan at least once a year;

(c) revise the plan if a change in circumstances is likely to affect the security risks identified in the assessment referred to in paragraph (1)(f);

(d) notify without delay the persons referred to in paragraph (a) of any significant revisions to the plan; and

(e) provide a copy of the plan to the Minister upon his or her request.

Commensurate measures

(3) The measures required under subsection (1) and under subsection 7.3(2) of the Act must be commensurate with the security risks identified in the assessment referred to in paragraph (1)(f).

Pre-existing plan

(4) For greater certainty, nothing in this section requires a railway carrier or railway loader to develop a security plan if it already has a plan that meets the requirements of subsections (1) and (3).

Persons required to undergo security plan training

11 **(1)** A person who is employed by or is acting directly or indirectly for a railway carrier or railway loader to which this section applies is required to undergo training on the security plan if that person

(a) offers for transport, handles or transports by railway vehicle, in Canada, any of the dangerous goods set out in Schedule 1; or

(b) is responsible, in Canada, for implementing the security plan or any portion of it but does not perform any of the duties referred to in paragraph (a).

Provision of training

(2) The railway carrier or railway loader must ensure that training on the security plan is provided to the person

(a) before the day on which the person initially undertakes the duties referred to in paragraph (1)(a), unless the person has, before that date, received training that meets the requirements of section 12;

(b) within six months after the later of the day on which this subsection comes into force and the day on which the person initially undertakes the responsibility referred to in paragraph (1)(b), unless the person has, before that date, received training that meets the requirements of section 12; and

(c) on a recurrent basis at least once every three years after the day on which a person completed their previous training, including any training received before the coming into force of this subsection that meets the requirements of section 12.

Supervision

(3) The railway carrier or railway loader must ensure that, until a person with the duties referred to in paragraph (1)(b) undergoes training on the security plan, the person performs their duties under the supervision of a person who has undergone training onthe components of the plan that are relevant to the duties of the person being supervised.

Training topics

12 Training on the security plan must cover the following topics:

(a) the railway carrier's or railway loader's security objectives;

(b) the railway carrier's or railway loader's organizational structure with respect to security;

(c) the railway carrier's or railway loader's security procedures;

(d) the security duties of the person who is undergoing the training and any other security duties that are relevant to their duties; and

(e) the security plan measures that, in the event of a security incident, are relevant to the duties of the person undergoing the training.

Training on revised plan

13 If a railway carrier or railway loader revises the security plan under subsection 10(2) in a way that significantly affects the duties referred to in subsection 11(1), it must ensure that a person with those duties is provided with training on the revisions as soon as possible but not later than 90 days after the day on which the plan is revised.

Security Awareness Training

Security awareness training

14 **(1)** A railway carrier or railway loader must ensure that security awareness training is provided on the following topics:

(a) the security risks that are posed by the dangerous goods that the railway carrier or railway loader offers for transport, handles or transports;

(b) the measures that are designed to enhance rail security; and

(c) the recognition of and response to potential threats and other security concerns.

Persons required to undergo training

(2) A person who is employed by or is acting directly or indirectly for the railway carrier or railway loader is required to undergo the security awareness training if the person

(a) offers for transport, handles or transports dangerous goods by railway vehicle, in Canada; or

(b) has duties, in Canada, regarding the security of the transportation of dangerous goods by railway vehicle but does not perform any of the duties referred to in paragraph (a).

Provision of training

(3) The railway carrier or railway loader must ensure that the security awareness training is provided to the person

(a) before the day on which the person initially undertakes the duties referred to in paragraph (2)(a), unless the person has, before that date, received an equivalent training;

(b) within six months after the later of the day on which this subsection comes into force and the day on which the person initially undertakes the duties referred to in paragraph (2)(b), unless the person has, before that date, received an equivalent training; and

(c) on a recurrent basis at least once every three years after the day on which a person completed their previous training, including any equivalent training received before the coming into force of this subsection.

Supervision

(4) The railway carrier or railway loader must ensure that, until a person with the duties referred to in paragraph (2)(b) undergoes security awareness training, the person performs their duties under the supervision of a person who has undergone that training.

Training Records

Training records

15 **(1)** A railway carrier or railway loader must have a training record for each person who has undergone training under section 11, 13 or 14.

Contents of training record

(2) The training record must include

(a) the person's name and details of the most recent training session that the person has received under each section, namely the date, the duration, the course title, the delivery method, the components of the security plan that were covered, if applicable, and the name of the training provider; and

(b) the title and date of each training session that the person has previously followed under each section.

Retention period

(3) The railway carrier or railway loader must retain the record for at least two years after the day on which the person ceases to be employed by or act directly or indirectly for the railway carrier or railway loader.

Notes

PART 4
Exemptions

Various exemptions

16 Parts 1 to 3 do not apply in respect of dangerous goods that are exempted from all or a portion of the *Transportation of Dangerous Goods Regulations* in accordance with one or more of the provisions of those Regulations that are set out in Schedule 2.

Limited quantities

17 Parts 1 to 3 do not apply in respect of dangerous goods that are in a limited quantity as determined in accordance with subsection 1.17(1) of the *Transportation of Dangerous Goods Regulations*.

Excepted quantities

18 Parts 1 to 3 do not apply in respect of dangerous goods if

(a) they are in an excepted quantity as determined in accordance with subsections 1.17.1(1) and (2) of the *Transportation of Dangerous Goods Regulations* or are in an excepted quantity that is specified in subsection 1.17.1(8) of those Regulations; and

(b) the requirement set out in subsection 1.17.1(5) of those Regulations is met.

Samples for classifying, analysing or testing

19 Parts 2 and 3 do not apply in respect of samples of goods that a railway loader reasonably believes to be dangerous goods if

(a) the classification or the exact chemical composition of the goods is unknown and cannot be readily determined; and

(b) the conditions set out in paragraphs 1.19.1(a) to (d) of the *Transportation of Dangerous Goods Regulations* are met.

Dangerous goods in apparatus, piece of equipment or piece of machinery

20 Part 2 and sections 9 to 13 do not apply in respect of dangerous goods that are exempted from a portion of the *Transportation of Dangerous Goods Regulations* in accordance with special provision 167 of those Regulations.

Flammable liquids

21 Parts 2 and 3 do not apply in respect of dangerous goods that are exempted from a portion of the *Transportation of Dangerous Goods Regulations* in accordance with section 1.33 of those Regulations.

Engines or machinery containing dangerous goods

22 Parts 2 and 3 do not apply in respect of dangerous goods that are exempted from a portion of the *Transportation of Dangerous Goods Regulations* in accordance with special provision 154 of those Regulations.

Human or animal specimens

23 Parts 1 to 3 do not apply in respect of dangerous goods that are exempted from a portion of the *Transportation of Dangerous Goods Regulations* in accordance with section 1.42 of those Regulations.

Medical or clinical waste

24 Parts 1 to 3 do not apply in respect of dangerous goods that are medical waste or clinical waste if the conditions set out in paragraphs 1.42.3(a) and (b) of the *Transportation of Dangerous Goods Regulations* are met.

Radioactive materials

25 Parts 2 and 3 do not apply in respect of dangerous goods that are radioactive materials included in Class 7 if the conditions set out in paragraphs 1.43(a) and (b) of the *Transportation of Dangerous Goods Regulations* are met.

Residue in drum

26 **(1)** Subject to subsection (2), Part 2 and sections 9 to 13 do not apply in respect of a residue of dangerous goods contained in a drum if the conditions set out in paragraphs 1.44(a) and (b) of the *Transportation of Dangerous Goods Regulations* are met.

Exception

(2) This exemption does not apply in respect of dangerous goods that are included in Packing Group I or that are contained in a drum for which a Class 1, 4.3, 6.2 or 7 label is required under the *Transportation of Dangerous Goods Regulations*.

Marine pollutants

27 Part 2 and sections 9 to 13 do not apply in respect of substances that are classified as marine pollutants in accordance with subparagraph 2.43(b)(ii) of the *Transportation of Dangerous Goods Regulations*.

Life-saving appliances

28 Parts 1 to 3 do not apply in respect of dangerous goods that are determined, in accordance with subsections (1) and (2) of special provision 21 of the Transportation of Dangerous Goods Regulations, to be either UN2990, LIFE-SAVING APPLIANCES, SELF-INFLATING or UN3072, LIFE-SAVING APPLIANCES NOT SELF-INFLATING, if the conditions set out in subsection (3) of that special provision are met.

Molten sulphur

29 Parts 1 to 3 do not apply in respect of dangerous goods that are UN2448, MOLTEN SULFUR, MOLTEN SULPHUR, SULFUR, MOLTEN or SULPHUR, MOLTEN, if the dangerous goods are transported in a large means of containment and the conditions set out in paragraphs (a) and (b) of special provision 32 of the *Transportation of Dangerous Goods Regulations* are met.

Lithium cells and batteries

30 Parts 1 to 3 do not apply in respect of dangerous goods that are UN3090, LITHIUM METAL BATTERIES (including lithium alloy batteries), UN3091, LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT (including lithium alloy batteries) or LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT (including lithium alloy batteries), UN3480, LITHIUM ION BATTERIES (including lithium ion polymer batteries) or UN3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries) or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries), if

(a) the conditions set out in subsection (1) of special provision 34 of the *Transportation of Dangerous Goods Regulations* are met; and

(b) in the case of cells and batteries that are installed in equipment, the requirements of subsections (2) to (4) of special provision 34 of those Regulations are met.

Neutron radiation detectors

31 **(1)** Parts 1 to 3 do not apply in respect of a neutron radiation detector, including one with solder glass joints, that

(a) does not contain more than 1 g of boron trifluoride gas;

(b) may be transported under the UN number and shipping name UN1008, BORON TRIFLUORIDE, in accordance with subsection (1) of special provision 145 of the *Transportation of Dangerous Goods Regulations*; and

(c) is packed in accordance with subsection (2) of special provision 145 of those Regulations.

Radiation detection systems

(2) Parts 1 to 3 do not apply in respect of a radiation detection system that contains a neutron radiation detector, including one with solder glass joints, if

(a) the neutron radiation detector meets the conditions set out in paragraphs (1)(a) and (b); and

(b) the radiation detection system is packed in accordance with subsection (3) of special provision 145 of the *Transportation of Dangerous Goods Regulations*.

Notes

PART 5
Amendments and Coming into Force

Amendments to These Regulations

Sections 1 to 31 have been updated in accordance with amendments 32, 33 and 34.

Coming into Force

One month after registration

35 **(1)** Subject to subsections (2) to (4), these Regulations come into force on the day that, in the first month after the month in which they are registered, has the same calendar number as the day on which they are registered or, if that first month has no day with that number, the last day of that first month.

Three months after registration

(2) Sections 4 to 7 come into force on the day that, in the third month after the month in which these Regulations are registered, has the same calendar number as the day on which they are registered or, if that third month has no day with that number, the last day of that third month.

Nine months after registration

(3) Sections 8 to 15 come into force on the day that, in the ninth month after the month in which these Regulations are registered, has the same calendar number as the day on which they are registered or, if that ninth month has no day with that number, the last day of that ninth month.

First anniversary of registration

(4) Sections 19 and 32 to 34 come into force on the first anniversary of the day on which these Regulations are registered.

Notes

SCHEDULE 1

(Section 9 and paragraphs 10(1)(f), (h) and (i) and 11(1)(a))

Security-sensitive Dangerous Goods

Item	Description
1	Any quantity of dangerous goods included in Class 1.1, 1.2 or 1.3
2	Any quantity of dangerous goods included in Class 1.4, 1.5 or 1.6 for which a placard is required under Part 4 of the *Transportation of Dangerous Goods Regulations*
3	Any dangerous goods included in Class 2.1 that are in a single means of containment and are in a quantity that exceeds 3,000 L
4	Any dangerous goods included in Class 2.2, with a subsidiary class of Class 5.1, that are in a single means of containment and are in a quantity that exceeds 3,000 L
5	Any quantity of dangerous goods included in Class 2.3
6	Any dangerous goods included in Class 3 that are included in Packing Group I or II, are in a single means of containment and are in a quantity that exceeds 10,000 L
7	Any of the following dangerous goods included in Class 3 that are included in Packing Group III, are in a single means of containment and are in a quantity that exceeds 10,000 L: **(a)** UN1170, ETHANOL with more than 24% ethanol, by volume, ETHANOL SOLUTION with more than 24% ethanol, by volume, ETHYL ALCOHOL with more than 24% ethanol, by volume, or ETHYL ALCOHOL SOLUTION with more than 24% ethanol, by volume; **(b)** UN1202, DIESEL FUEL, GAS OIL or HEATING OIL, LIGHT; **(c)** UN1267, PETROLEUM CRUDE OIL; **(d)** UN1268, PETROLEUM DISTILLATES, N.O.S., or PETROLEUM PRODUCTS, N.O.S.; **(e)** UN1863, FUEL, AVIATION, TURBINE ENGINE; **(f)** UN1987, ALCOHOLS, N.O.S.; **(g)** UN1993, FLAMMABLE LIQUID, N.O.S.; **(h)** UN3295, HYDROCARBONS, LIQUID, N.O.S.; and **(i)** UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

8 Any quantity of any of the following dangerous goods included in Class 3 that are desensitized explosives and for which a placard is required under Part 4 of the *Transportation of Dangerous Goods Regulations*:

(a) UN1204, NITROGLYCERIN SOLUTION IN ALCOHOL with not more than 1% nitroglycerin;

(b) UN2059, NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12.6% nitrogen, by dry mass, and not more than 55% nitrocellulose;

(c) UN3064, NITROGLYCERIN, SOLUTION IN ALCOHOL with more than 1% but not more than 5% nitroglycerin; and

(d) UN3379, DESENSITIZED EXPLOSIVE, LIQUID, N.O.S.

9 Any quantity of dangerous goods included in Class 4.1 that are desensitized explosives and for which a placard is required under Part 4 of the *Transportation of Dangerous Goods Regulations*

10 Any dangerous goods included in Class 4.2 that are included in Packing Group I or II, are in a single means of containment and are in a quantity that exceeds 3,000 L

11 Any quantity of dangerous goods included in Class 4.3 for which a placard is required under Part 4 of the *Transportation of Dangerous Goods Regulations*

12 Any dangerous goods included in Class 5.1 that are included in Packing Group I or II, are in a single means of containment and are in a quantity that exceeds 3,000 L

13 Any quantity of either of the following dangerous goods included in Class 5.2:

(a) UN3111, ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED,; and

(b) UN3112, ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED

14 Any dangerous goods included in Class 6.1 that are in a single means of containment and are in a quantity that exceeds 3,000 L

15 Any quantity of dangerous goods included in Class 6.1 that are included in Packing Group I due to inhalation toxicity

16 More than 500 kg of either of the following dangerous goods included in Class 7:

(a) UN2977, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE; and

(b) UN2978, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile excepted

17 Any quantity of a substance that is set out in the table to section 2.2 of Regulatory Document REGDOC-2.12.3, S*ecurity of Nuclear Substances: Sealed Sources*, published in May 2013 by the Canadian Nuclear Safety Commission, as amended from time to time, and that is categorized in accordance with that table as a category 1 source or category 2 source

18 Any quantity of dangerous goods included in Class 7 that are Category I nuclear materials, Category II nuclear materials or Category III nuclear materials as defined in section 1 of the *Nuclear Security Regulations*

19 Any dangerous goods included in Class 8 that are included in Packing Group I, are in a single means of containment and are in a quantity that exceeds 3,000 L

SCHEDULE 2
(Section 16)

Exemptions Under the *Transportation of Dangerous Goods Regulations*

Item	Provision of the *Transportation of Dangerous Goods Regulations*
1	Section 1.15
2	Section 1.18
3	Section 1.19
4	Section 1.25
5	Section 1.27
6	Section 1.32
7	Section 1.36
8	Section 1.42.1
9	Section 1.42.2
10	Section 1.45
11	Section 1.46
12	Special provision 18
13	Subsection (2) of special provision 25
14	Special provision 33
15	Special provision 36
16	Subsection (2) of special provision 39
17	Special provision 40
18	Subsection (2) of special provision 56
19	Special provision 63
20	Subsection (1) of special provision 64
21	Subsection (2) of special provision 70
22	Special provision 90

23 Special provision 95

24 Special provision 96

25 Special provision 97

26 Subsection (2) of special provision 99

27 Special provision 100

28 Subsection (2) of special provision 104

29 Special provision 107

30 Subsection (7) of special provision 124

31 Special provision 127

32 Special provision 128

33 Special provision 134

34 Subsection (2) of special provision 144

35 Special provision 148

Regulatory Impact Analysis Statement

Transportation of Dangerous Goods by Rail – Security Regulations

This statement is not part of the Regulations.

Executive summary

Issues

Freight trains transporting dangerous goods can be particularly vulnerable to misuse or sabotage, given the harmful nature of the goods and the extensive and accessible nature of the railway system. To mitigate these risks and to better align Canadian standards with international standards, Transport Canada is introducing risk-based regulations for the transportation of dangerous goods by rail in Canada.

Description

The *Transportation of Dangerous Goods by Rail Security Regulations* (the Regulations) will require railway carriers and railway loaders to proactively engage in security planning processes and manage security risks, by introducing the following elements:

- security awareness training for employees;
- security plans that include appropriate measures to address risks; and
- security plan training for employees with duties related to the security plan or security sensitive dangerous goods.

Railway carriers will also be required to

- conduct security inspections of railway vehicles containing dangerous goods for which a placard is required when accepted for transport and when placed in a train;
- report potential threats and other security concerns to the Transport Canada Situation Centre; and
- have a rail security coordinator.

Cost-benefit statement

The Regulations are expected to have a positive impact on public security, by increasing the likelihood that terrorist activities would be detected and prevented, and by minimizing the consequences should an incident occur, such as loss of life, property damage, environmental damage, and reduced international trade flows.

The Regulations are expected to result in costs to railway carriers and railway loaders and the Government of $17.43 million over a 10-year period (present value). As with the analysis of any security proposal, it is difficult to quantify the benefits; however, the Regulations will result in a positive impact on public security by reducing the likelihood that a terrorist attack involving dangerous goods transported by rail would occur.

"One-for-One" Rule and small business lens

The "One-for-One" Rule applies, with an estimated annualized administrative cost increase to railway loaders and railway carriers of $784 (IN) and an additional regulatory title.

The Regulations are expected to result in incremental compliance and administrative costs for all railway carriers and railway loaders of dangerous goods, regardless of their size. To minimize costs, Transport Canada is introducing an approach that aligns compliance costs with underlying risks, and gives industry the flexibility to implement security practices that are commensurate with their individual risk profiles and operational environments. Under this flexible approach, compliance activities and associated costs are expected to be lesser for small businesses.

Domestic and international coordination and cooperation

The Regulations will enhance alignment of the Canadian dangerous goods security requirements with the United States hazardous materials requirements, and facilitate the cross-border movement of dangerous goods by rail. The Regulations are also generally aligned with the United Nations Model Regulations respecting transportation of dangerous goods security.

The Regulations are also consistent with the objective of the Canada–United States Regulatory Cooperation Council, which is to better align Canada–United States regulatory approaches to make it easier for industry to do business on both sides of the border.

Background

Dangerous goods are an important aspect of the Canadian economy, with an estimated 30 million shipments transported within Canada each year, approximately 24% of which are transported by rail. Dangerous goods are used in almost every facet of Canadians' lives, from fuelling vehicles and providing home comfort, to manufacturing and industrial processes. Though dangerous goods are important to the Canadian economy and essential to modern life, they can, by their nature, be harmful to people, property and the environment, if misused or mishandled.

To mitigate harm during transport, the Government has historically focused on implementing safety requirements to reduce the likelihood and consequences of an accidental release of dangerous goods. However, dangerous goods are also vulnerable to deliberate misuse or sabotage in the rail supply chain. Though there have been no successful attacks in Canada, terrorist groups have committed numerous deadly attacks using dangerous goods in other parts of the world, which have highlighted the vulnerability of the system. In recognition of this risk, Parliament amended the *Transportation of Dangerous Goods Act, 1992* (TDGA) in 2009 to provide new federal authority to enhance the security of the transportation of dangerous goods in Canada. To date, the authority to regulate security has not been exercised: there are no regulations in place respecting the security of the transportation of dangerous goods by rail. Rather, Transport Canada and the rail industry have been working together to strengthen rail security, in part through a Memorandum of Understanding with the Railway Association of Canada and its member signatories. Under this agreement, signatories have implemented a number of effective security practices. However, the agreement does not specifically target the transportation of dangerous goods, nor does it include all railway carriers or any railway loaders.

Other comparable jurisdictions have implemented regulatory regimes for the security of the transportation of dangerous goods by rail. The United Nations has developed Model Regulations to encourage the uniform development of national and international transportation of dangerous goods requirements. The Model Regulations are widely accepted internationally, and form the basis of several international agreements and national regulatory regimes (as well as that of the European Union). The United States, Canada's largest trading partner, has also developed security regulations for the transportation of hazardous materials by rail that are generally aligned with the United Nations Model Regulations.

Issues

Strategic risk assessments conducted by Government of Canada security experts have indicated hat the transportation of dangerous goods by rail is vulnerable to misuse or sabotage, including a terrorist attack, and the adverse impacts of such an event could be significant.

Though there is no imminent threat to the transportation of dangerous goods in Canada at this time, there are heightened concerns about the potential threat posed by individuals who subscribe to extremist ideologies. In addition, past events have highlighted the devastating impact that rail incidents involving dangerous goods can have on public safety, the environment and the economy. Most notably, on July 6, 2013, a Montreal, Maine & Atlantic Railway (MMA) train carrying light crude oil derailed in downtown Lac-Mégantic, Quebec: the ensuing explosions and fire killed 47 people, destroyed 40 buildings, and caused serious environmental damage to the downtown area and adjacent river and lake. Though this incident was safety-related, it underscores the devastation that could occur if trains transporting dangerous goods were specifically targeted by terrorists.

The Lac-Mégantic accident and other recent derailments across the United States and Canada (e.g. Casselton, North Dakota; and Gogama, Ontario) have occurred against the backdrop of growing North American crude oil production, limited pipeline transmission capacity, and the corresponding rise in the volume of oil moved by rail. The transportation levels of crude oil by rail are predicted to continue in the near-to-medium term. This increase in volume of crude oil and other dangerous goods transported by rail translates into an increase in the inherent risks of moving these dangerous goods through Canada's communities.

Though Transport Canada has voluntary agreements with many railway carriers, Canada currently has no security regulations that require railway carriers and railway loaders to address the risks associated with transporting dangerous goods by rail, which is inconsistent with international standards. In an effort to improve Canada's security posture and align Canadian standards with international standards, Transport Canada is introducing risk-based regulations to strengthen the security of transporting dangerous goods by rail.

Objectives

In support of the Government's overall mission to promote a safe, secure, efficient and environmentally responsible transportation system, Transport Canada is introducing a regulatory framework for the security of the transportation of dangerous goods by rail in Canada. The Regulations are intended to mitigate the security risks associated with the transportation of dangerous goods by rail, to demonstrate the Government of Canada's commitment to safe communities by increasing the security of the transportation of dangerous goods by rail, and to align Canada's transportation of dangerous goods by rail security regime with international standards and best practices. The objectives include the following:

- Enhancing the security of the transportation of dangerous goods by rail by
  - increasing industry's ability to detect security concerns and prevent security incidents,
  - promoting industry's proactive management of security risks,
  - improving industry's effective and efficient management of security responsibilities,
  - heightening industry's awareness of and focus on security, and increasing its capacity to respond to and recover from security incidents, and
  - enhancing coordination and communication of security issues within industry and between industry and Transport Canada;
- Strengthening the security of the rail supply chain;
- Enhancing the alignment of Canada's transportation of dangerous goods by rail security regime with that of the United States, to facilitate cross-border trade; and
- Aligning Canada's transportation of dangerous goods by rail security regime with international standards and best practices.

Description

The Regulations have been designed using a management-based approach that will require railway carriers and railway loaders to proactively engage in security planning processes and manage security risks. This approach was chosen in response to the open and extensive nature of the railway system and the fact that security risks are constantly evolving. It was also chosen to give railway carriers and railway loaders the flexibility to adopt security practices that are tailored to their operations and proportionate to their risks.

The Regulations will require railway carriers and railway loaders to implement the following risk-based security practices and controls.[1]

1. **Reporting potential threats and other security concerns (railway carriers):** Railway carriers will be required to report potential threats and security concerns to the Transport Canada Situation Centre.
2. **Rail security coordinator (railway carriers):** Railway carriers will be required to designate a rail security coordinator, who will be responsible for coordinating security matters within their organization and serving as the primary contact for security-related activities and communications with Transport Canada and law enforcement and emergency response agencies.
3. **Railway vehicle security inspections (railway carriers):** Railway carriers will be required to conduct security inspections of railway vehicles containing dangerous goods for which a placard is required under Part 4 of the *Transportation of Dangerous Goods Regulations* when accepted for transport and when placed in a train, to check for signs of tampering or suspicious items, and take measures to address the situation if security has been compromised.
4. **Security plan and risk assessment (railway carriers and railway loaders):** Railway carriers and railway loaders of "security-sensitive dangerous goods" (i.e. goods that have been determined to pose a security risk, and are listed in Schedule 1 of the Regulations, such as any quantity of explosives included in Class 1.1, 1.2, or 1.3) will be required to develop and implement a security plan that includes requirements set out in subsections 10(1) to 10(4) of the Regulations (e.g. appropriate measures to address the risks identified in the assessment, such as measures to prevent access by unauthorized persons to those dangerous goods, or measures for responding to the security incidents).

   The Regulations set out general components that will need to be addressed in each company's security plan, including measures that would address personnel security and unauthorized access.[2] This will give regulated entities the flexibility to develop plans that are commensurate with their individual circumstances and their assessed risks. Railway carriers and railway loaders will be required to provide a copy of their plans (including their risk assessments) to the Minister of Transport upon request.
5. **Security plan training (railway carriers and railway loaders):** Personnel who have responsibilities under the security plan or duties that involve security-sensitive dangerous goods will be required to undergo training on the security plan. Refresher training will be required at least once every three years, and within 90 days if the security plan is revised in a way that significantly affects the person's security duties.

1 Railway loaders will be subject to the Regulations one year after the Regulations come into force in accordance with the coming into force provisions (section 35).

2 The Regulations must be read in conjunction with sections 5 and 7.3 of the TDGA. Subsection 7.3(1) provides that "No prescribed person shall import, offer for transport, handle or transport dangerous goods in a quantity or concentration that is specified by regulation — or that is within a range of quantities or concentrations that is specified by regulation — before the person has undergone security training in accordance with the regulations, has a security plan that meets the requirements of subsection (2) and has implemented the plan in accordance with the regulations." Subsection 7.3(2) provides that "The plan shall, in accordance with the regulations, set out measures to prevent the dangerous goods from being stolen or otherwise unlawfully interfered with in the course of the importing, offering for transport, handling or transporting."

6. **Security awareness training (railway carriers and railway loaders):** In recognition that a knowledgeable workforce is vital to security, personnel who, in the course of their employment, directly affects dangerous goods transportation security will be required to undergo training, and railway carriers and railway loaders will be required to ensure that training is provided to personnel, on the following topics:
   – security risks associated with transporting dangerous goods;
   – measures to enhance rail security; and
   – ways to recognize and respond to potential threats and other security concerns.

For personnel with duties involving dangerous goods, training would be required before they initially undertake such duties and at least once every three years thereafter. For all other personnel (those who have duties regarding the security of the transportation of dangerous goods, but do not handle, offer for transport or transport dangerous goods), awareness training will be required within six months of employment and at least every three years. The goal of this requirement is to increase the industry's ability to prevent, detect and effectively respond to and recover from security issues.

The table below summarizes the application of the requirements.

TABLE 1
Application of the requirements

Requirement	Who?[3]	Section of Regulations	What goods?
1. Reporting potential threats and other security concerns	Railway carriers	Section 3	Any dangerous goods
2. Rail security coordinator	Railway carriers	Sections 5 and 6	Any dangerous goods
3. Rail security inspections	Railway carriers	Section 7	Dangerous goods for which a placard is required
4. Security plan (including risk assessment)	Railway carriers and railway loaders	Section 10	Security-sensitive dangerous goods (defined in Schedule 1)
5. Security plan training	Railway carriers and railway loaders	Sections 11 to 13 and 15	Security-sensitive dangerous goods (defined in Schedule 1)
6. Security awareness training	Railway carriers and railway loaders	Sections 14 and 15	Any dangerous goods

The Regulations include a list of exemptions to ensure that the requirements would not apply to specified shipments or situations that do not pose security concerns. Part 4 of the Regulations outlines these exemptions, and provides exemptions from certain parts or sections of the Regulations.

3 Railway loaders will be subject to the Regulations according to the coming-into-force provisions (section 35).

Regulatory and non-regulatory options considered

Transport Canada considered a number of options when developing a strategy to enhance the security of transporting dangerous goods, ranging from a regulatory approach for rail as well as road, to an exclusively voluntary approach focused on capacity-building activities with industry.

Options not chosen:

- **Developing regulations for rail and road:** Transport Canada initially considered developing security regulations for the transportation of dangerous goods by rail and road. However, this approach would have taken a significant amount of time and money to implement (given the size and complexity of the trucking industry, and the increased compliance costs for industry and oversight costs for the Government). Further, this approach would not have allowed for the timely implementation of a baseline security regime for the transportation of dangerous goods by rail, which is a priority given the recent high-profile incidents involving dangerous goods (specifically crude oil) transported by rail.
- **Developing more stringent regulations for rail:** Transport Canada also considered developing security regulations for the transportation of dangerous goods by rail that were more stringent, including requirements to compile commodity data, conduct route analysis and selection, and provide location and shipping information to Transport Canada (i.e. regulations that are fully aligned with the United States hazardous materials security regulations). However, preliminary consultations and analysis indicated that this approach might impose a burden that is disproportionate to the security risks associated with transporting dangerous goods by rail in Canada. Significant additional analysis would have to be undertaken to understand the full impact on industry (e.g. scientific analysis of the list of security sensitive dangerous goods that would be subject to the enhanced requirements, and the evaluation and identification of geographical areas that would be subject to location and shipping information requirements [i.e. the identification of High Threat Urban Areas]). This approach would not have allowed for the timely implementation of a baseline security regime for the transportation of dangerous goods by rail. Furthermore, not all of the United States security requirements would be practical or cost-effective to implement in Canada, given the different geographical landscape and limited routing options.
- **Pursuing a voluntary agreement for rail:** Transport Canada also considered amending the existing Memorandum of Understanding on Railway Security between Transport Canada and the Railway Association of Canada to focus on the security of the transportation of dangerous goods. However, it would have been impractical to pursue agreements with railway loaders given the size of the industry, and pursuing agreements exclusively with railway carriers would not have the desired impact of increasing the security of the rail supply chain. In addition, this approach would have relied on a voluntary, non-legally binding Memorandum of Understanding and would not have been legally enforceable by Transport Canada.
- **Conducting capacity-building activities with stakeholders:** Finally, Transport Canada considered taking an exclusively voluntary approach to enhance the security of the transportation of dangerous goods by rail, by undertaking more capacity-building activities with industry (e.g. holding workshops and developing guidance materials). However, this approach is not commensurate with the risks associated with transporting dangerous goods by rail, and is inconsistent with the approach taken in the United States and internationally.

Based on an analysis of the options, an assessment of international standards and requirements and the level of risk within the sector, Transport Canada considers management-based regulations for railway carriers and railway loaders to be the most appropriate and effective option at this time. The approach being introduced is partially aligned with the United States HAZMAT security regime for rail (i.e. it is consistent with the basic United States security requirements, but not with the more stringent requirements), and is generally aligned with United Nations recommendations. It would facilitate the timelier implementation of a baseline security regime for the transportation of dangerous goods by rail, and takes into consideration the potentially significant costs to industry and Government that would result from regulating both the rail and trucking sectors. The Regulations are risk-based, and give industry the flexibility to adopt security practices that are tailored to their operations and proportionate to their risks.

Benefits and costs

A cost-benefit analysis has been conducted to assess the impact of the Regulations on stakeholders. The cost-benefit analysis identifies, quantifies and monetizes, where possible, the incremental costs and benefits of the security regulations for the transportation of dangerous goods by rail in Canada.

Timeframe: A 10-year period (2019–2028) was used to evaluate the impacts of these Regulations. A 7% discount rate was used to derive the present value of the option under consideration to a base year of 2019.

Stakeholders: The stakeholders that will be directly impacted by the Regulations are railway carriers that have possession of dangerous goods while they are in transport by railway vehicle on a main railway line; railway loaders, including any person that operates a facility, or any manufacturer or producer of dangerous goods that uses a facility, which is connected to a railway line where a railway vehicle is placed for the loading or unloading of dangerous goods; and their employees.

Baseline scenario: Many of the requirements are already being implemented by the rail industry. Companies that transport dangerous goods into the United States, those that are members of voluntary trusted trader programs like Canada's Partners in Protection and the United States Customs-Trade Partnership Against Terrorism, and those that are signatories to the Railway Security Memorandum of Understanding with Transport Canada already have many of the regulatory security practices in place. The impact of the Regulations on those companies is expected to be minimal. The cost estimate is based on the assumption that 15% of stakeholders are already compliant with the regulatory requirements in the baseline scenario. Due to data limitations, a sensitivity analysis was conducted on this ratio.

Key data and assumptions:

1. **Railway carriers:** According to the registration information under Transport Canada's Protective Direction No. 32, there were a total of 39 railways that transported dangerous goods in Canada in 2013. Two of them, the Canadian National Railway Company (CN) and the Canadian Pacific Railway (CPR), are Class 1 railways, and the remaining 37 are short line operators. It is estimated that Class 1 railways currently employ 28,426 people. Data from the Railway Association of Canada suggests that there are, on average, approximately 40 employees per short line freight railway in Canada, for an estimated total of 1,480 employees for the 37 short line operators. Using these figures, it is estimated that there are 29,906 persons employed by the 39 railways that transport dangerous goods in Canada. It is assumed that 30% of these employees, or 8,972 individuals, handle dangerous goods. Given an assumed baseline compliance rate of 15%, the incremental costs of the Regulations have been estimated for 7,626 individuals in railway carriers.
2. **Railway loaders:** Given the limited data availability, it is assumed that the total number of railway loaders that operate in Canada is about 10% of the number of consignors that are registered under the Hazardous Materials Registration Program with the Pipeline and Hazardous Materials Safety Administration of the United States Department of Transportation. In 2014, 14,790 United States consignors were registered under this program. Assuming that the Canadian railway loader population would be approximately 10% of the United States consignor population, it is estimated that there are 1,479 railway loaders in Canada. Given an assumed baseline compliance rate of 15%, the number of railway loaders expected to require action to comply with the Regulations is estimated to be about 1,257.

A breakdown of the railway loaders by firm size is based on the distribution of small, medium and large businesses in Canada. The average number of employees per firm in Canada is 7 for small businesses, 124 for medium-sized businesses, and 715 for large businesses. It is assumed that 10% of employees in medium and large companies handle dangerous goods, and 25% of employees in small companies handle dangerous goods. It follows that an estimated 3,177 railway loader employees handle dangerous goods in Canada. Given an assumed baseline compliance rate of 15%, the number of railway loader employees expected to require action to comply with the Regulations is estimated to be about 2,664.

Detailed estimates of railway carriers, railway loaders, and their employees expected to require action to comply with the Regulations are set out in Table 2.

TABLE 2
Estimated number of railway carriers, railway loaders and employees who are expected to require action to comply with the requirements

	Railway Carriers	Railway Loaders	Total
Number of railway carriers and railway loaders handling/transporting dangerous goods	**33**	**1,257**	**1,290**
Non-small business	2	27	29
Small business	31	1,229	1,260
Total number of employees	**25,420**	**13,724**	**39,144**
Employees in non-small business	24,162	5,121	29,283
Employees in small business	1,258	8,603	9,861
Number of employees handling dangerous goods	**7,626**	**2,664**	**10,290**
Employees in non-small business	7,249	513	7,762
Employees in small business	377	2,151	2,528

3. **Time to meet requirements:** The estimated amount of time required by stakeholders to meet each requirement is based on Transport Canada's previous experience working with the industry and is shown in the following table (Table 3). A sensitivity analysis is conducted on this variable in the sensitivity analysis section.

TABLE 3
Estimated time (hours per year) to meet the regulatory requirements

Requirement	Non-small Business	Small Business
Developing a security plan	50	25
Reviewing and updating a security plan	15	7.5
Awareness training	1	1
Developing security plan training materials	15	15
Security plan training	1.5	1.5
Rail security coordinator	72	36
Reporting significant security concerns	20	5

Costs

The following costs have been included in the analysis: costs of developing, reviewing and updating security plans; costs associated with awareness training and security plan training; costs associated with additional requirements for railway carriers; and Government costs.

Costs of developing, reviewing and updating security plans

As shown in Table 2, it is estimated that 1,290 companies (33 railway carriers and 1,257 railway loaders) will be required to develop a security plan under the Regulations. Of the 1,290 companies, an estimated 1,260 are small businesses and 30 are medium and large businesses. It is assumed that, on average, each small business would take 25 hours and each non-small business (medium and large firms) would take 50 hours to develop a security plan that meets the regulatory requirements. These are one-time costs that will be incurred in the first year of the Regulations coming into force.

Railway carriers and railway loaders will be required to review and update their security plans, if necessary, once a year starting in year 2. It is assumed that this would take 7.5 hours for small businesses and 15 hours for medium and large businesses (annually, from year 2 to year 10).

Implementation costs would vary significantly among railway carriers and railway loaders, depending on the nature of the materials they transport, the size and the complexity of their operations, as well as the security practices they already have in place. The annual compliance cost per company could range from almost nothing (for railway carriers and railway loaders that already have the regulatory security practices in place) to thousands of dollars. As each security plan is unique, it is difficult to estimate the associated implementation costs without knowing the specific circumstances of each entity. It is expected that each company will make reasonable and cost-effective decisions to improve security.

Given the above estimates and an hourly wage rate of $51.95 (the average wage rate of middle management occupations in trades, transportation, production and utilities), the present value of the total estimated costs associated with developing and reviewing security plans over 10 years is $5,067,777 ($144,587 for railway carriers and $4,923,189 for railway loaders), which corresponds to an annualized value of $721,537.

Costs associated with security awareness training

It is expected that security awareness training will be added to each railway carrier's or railway loader's existing safety training program. It is also expected that training delivery costs will be minimal, as the Regulations do not prescribe the method of delivering training. Rather, railway carriers and railway loaders will be able to determine the most efficient and effective method of training for their organization (e.g. self-instruction, online program or classroom sessions). The costs of developing the awareness training program are expected to be minimal, given that Transport Canada plans to provide guidance materials, and there are a variety of existing training programs that can be leveraged (e.g. documents and programs from the United States and from industry associations).

It is estimated that awareness training would take one hour on average per employee, and 39,144 employees would be required to receive the training. Following initial training, railway carriers and railway loaders will be required to retrain their employees once every three years. Therefore, the associated costs will be carried in year 1 (initial training) and every three years thereafter (years 4, 7 and 10). Railway carriers and railway loaders will be required to keep a record of the names of the employees who have taken the training to demonstrate compliance: it is estimated that this would take one minute per employee in year 1, after which it is assumed that companies would integrate their security awareness training program into their safety training program.

Given an hourly wage rate of $28.49 (the average wage rate of transport and heavy equipment operation and related maintenance occupations), the present value of the total costs of awareness training over the 10-year period is estimated at $1,696,786 ($1,101,891 for railway carriers and $594,896 for railway loaders), corresponding to an annualized value of $241,584.

Costs associated with security plan training

Employers will also be required to ensure training is provided on the security plan and its implementation. It is estimated that it would take each company approximately 15 hours to develop their security plan training program (in year 1), given that training modules and guidance are readily available and Transport Canada intends to develop guidance materials. It is expected that stakeholders will use the least costly option to deliver their training (e.g. using their own facilities and equipment), therefore there should be no or minimal program delivery costs.

It is assumed that 50% of the 10,290 employees (Table 2) who handle dangerous goods would be required to take approximately 1.5 hours of security plan training in year 1 (initial training) and every three years thereafter (years 4, 7 and 10).

Given the above estimates and an hourly wage rate of $51.95 for developing the security plan (the average rate of middle management occupations in trades, transportation, production and utilities) and $28.49 for receiving training (the average rate of transport and heavy equipment operation and related maintenance occupations), the present value of the total costs associated with security plan training (developing the training program and receiving training) is $1,673,749 over the 10-year period ($522,744 to railway carriers and $1,151,005 for railway loaders), corresponding to an annualized value of $238,304.

Costs associated with additional requirements for railway carriers (reporting, rail security coordinator and security inspections)

Under the Regulations, railway companies will be required to have a rail security coordinator who coordinates security practices and procedures within their organization and acts as the principal contact with appropriate law enforcement and emergency response agencies, as well as the Minister of Transport. It is estimated that a large railway carrier's rail security coordinator would require 72 hours per year and a small carrier's rail security coordinator would require 36 hours per year to fulfill their duties. It is assumed that each carrier would need an average of 10 minutes to prepare and to submit the name of the coordinator and other relevant information to Transport Canada. Whenever the coordinator is replaced, the updated information will have to be submitted to Transport Canada; it is assumed that this would occur once every three years.

Railway carriers will also be required to report potential threats and security concerns to Transport Canada. It is expected that, on average, there would be 20 reports per large business annually and 5 reports per small business annually, and that it would take carriers approximately one hour to prepare and submit each report.

The Regulations will also require railway carriers to conduct visual security inspections of railway vehicles containing dangerous goods for which a placard is required. It is expected that there would be no or very minimal incremental costs for conducting security inspections, since most carriers already conduct pre-trip visual inspections for safety purposes under the *Railway Safety Act*.

Based on the above-mentioned estimates and an hourly wage rate of $51.95 (the average wage rate of middle management occupations in trades, transportation, production and utilities), the present value of the costs associated with reporting duties is estimated at $80,037 over 10 years, which corresponds to an annualized value of $11,396. The present value of the costs associated with the rail security coordinator is estimated at $549,134 over 10 years, which corresponds to an annualized value of $78,184.

Government costs

The Government's costs will be driven by the need to dedicate an additional 8.5 full-time employees in years 1 to 10, to ensure that the Regulations will be supported by an effective and risk-based oversight regime. Costs include salaries, accommodation costs, travelling costs and training costs. Transport Canada expects that the Regulations will impose an additional $8.36 million (present value) on the Department over a 10-year period, which corresponds to an annualized value of $1.19 million.

Total costs

In summary, the present value of the total costs of the Regulations over a 10-year period is $17.43 million, including $2.40 million to railway carriers, $6.67 million to railway loaders, and $8.36 million to Transport Canada, which corresponds to an annualized value of $2.48 million.

Benefits

The Regulations are expected to have a positive impact on public security. They are expected to promote a more aware, alert, prepared and proactive regulated community that would be better able to detect, prevent, respond to and recover from terrorist incidents. The Regulations are intended to improve the industry's resilience, minimizing the consequences should an incident occur (minimizing loss of life, property damage, environmental damage and reduced international trade flows).

The Regulations will better align Canada's transportation of dangerous goods by rail security regime with international standards and practices. They will also enhance alignment of Canada's dangerous goods security requirements with the United States' hazardous materials requirements, and facilitate the cross-border movement of dangerous goods between the two countries.

As with the analysis of other security regulations, it is very difficult to quantify the associated benefits of the Regulations, given that both the probability and the impact (baseline and regulated option) are subjective and uncertain.

Table 4 provides the cost-benefit statement of the Regulations.

TABLE 4
Cost-benefit statement (Can$ 2017, PV 7%)[4]

A. Quantified impacts $ (PV)

Costs

	Base Year 2019	Year 2022	Final Year 2027	Total	Annualized Value
Railway carriers	$690,160	$75,361	$339,482	$2,398,393	$341,477
Railway loaders	$2,900,692	$381,363	$409,195	$6,669,089	$949,528
Industry — Total	**$3,590,852**	**$456,723**	**$748,677**	**$9,067,483**	**$1,291,006**
Government of Canada	**$984,898**	**$861,075**	**$861,075**	**$8,362,177**	**$1,190,586**
Total costs	**$4,575,751**	**$1,317,799**	**$1,362,611**	**$17,429,660**	**$2,481,591**
Total benefits: n/a					

B. Qualitative impacts

Costs: n/a

Benefits:

- Improved security
- Improved public safety
- Meeting public expectations
- Improved harmonization with the United States

4 Since these calculations have been rounded to the nearest dollar amount, the various totals in each of the tables in this report are approximate.

Sensitivity analysis

A sensitivity analysis was conducted on the key variables that are uncertain. These are the number of regulatees in compliance (i.e. baseline compliance rate) in the baseline and the time expected to meet each requirement.

Baseline compliance rate: Sensitivity on the total costs to industry was conducted with two scenarios: (1) 0%, reflecting a scenario where no regulatees are in compliance in the baseline; and (2) 30%, to reflect a scenario where twice as many regulatees are in compliance in comparison to the central scenario of 15%.

TABLE 5
Sensitivity analysis on the baseline compliance rate

	Baseline Compliance Rate		
	0%	**15%**	**30%**
Total costs to industry (PV, Can$ 2017)	$10,607,828	$9,067,483	$7,601,323

Time expected to meet each requirement: Two scenarios were considered to estimate total costs to industry given the different amount of time expected to meet each requirement: (1) 25% less time than the central case estimates is required to comply with each requirement; and (2) 25% more time is required.

TABLE 6
Sensitivity analysis on the time expected

	Time Expected		
	– 25%	**Central scenario (see Table 2)**	**+ 25%**
Total costs to industry (PV, Can$ 2017)	$8,491,749	$9,067,483	$9,643,222

Distributional analysis

In total, the incremental industry costs of the Regulations are estimated to be $9.07 million over 10 years or $1.29 million annualized. The railway carriers and railway loaders are expected to incur approximately 28.47% and 71.53% of total industry costs, respectively.

TABLE 7
Distribution of total industry costs among affected stakeholders (Can$ 2017)

Affected stakeholders	Total PV over 10 years (2017 Canadian constant dollars)	%
Railway carriers	$2,398,393	26.45%
Railway loaders	$6,669,089	73.55%
Total	**$9,067,483**	100.00%

More than half of the costs (55.89%) are due to the requirement of security plans (development, review and update). Approximately 18.71% of the costs are associated with awareness training. Approximately 18.46% of the costs are due to the requirement of security plan training (development of training materials and training). Approximately 6.06% of total costs are associated with the rail security coordinator requirement, and would be borne entirely by railway carriers. Approximately 0.88% of the costs are due to the requirement to report significant security concerns, and would be borne entirely by railway carriers. The distribution of total industry costs borne by differently affected stakeholders are presented in tables 8 and 9.

TABLE 8
Distribution of total industry costs by requirements

Item	Regulatory Requirement	Share of Total Industry Costs (%)
1.	Security plans: development, review and update	55.89%
2.	Awareness training	18.71%
3.	Security plan training: development of training materials and training	18.46%
4.	Rail security coordinator	6.06%
5.	Reporting significant security concerns	0.88%
	Total	**100.00%**

TABLE 9
Distribution of total industry costs by requirements among stakeholders

	Borne by Stakeholders		
	Railway Carriers %	**Railway Loaders %**	**Total %**
Security plans: development, review and update	2.85%	97.15%	100.00%
Awareness training (including administrative burden)	64.94%	35.06%	100.00%
Security plan training: development and training	31.23%	68.77%	100.00%
Rail security coordinator (including administrative burden)	100.00%	0.00%	100.00%
Security reporting	100.00%	0.00%	100.00%

"One-for-One" Rule

Transport Canada has considered the potential impact of the *Transportation of Dangerous Goods by Rail Security Regulations* on the administrative burden for businesses, and has determined that the "One-for-One" Rule applies. Specifically, two requirements will impose an additional administrative burden on railway carriers and railway loaders: the requirement for railway carriers and railway loaders to keep a record of the names of the employees who receive awareness training, and the requirement for railway carriers to provide the contact information of the rail security coordinator to Transport Canada.

It is assumed that companies will require one minute per employee to keep a record of awareness training in year 1, after which it is assumed that companies will integrate their security awareness training program into their safety training program, and each company would need an average of 10 minutes to prepare and submit the name of the rail security coordinator and other relevant information to Transport Canada.

Following the "One-for-One" Rule, a 7% discount rate and 10-year forecast period for the valuation were used. The price base year is in 2012 constant dollars. The present value base year for the valuation of impact under the Rule is 2012 (i.e. the incremental administrative costs were discounted back to 2012). The annualized value of the administrative burden costs over 10 years is estimated at $784 (IN) [or $1 per affected business] under the "One-for-One" Rule.

Small business lens

In order to enhance the security of the transportation of dangerous goods by rail and to strengthen the security of the rail supply chain, the Regulations will apply to all railway carriers and railway loaders, regardless of size. This will result in incremental compliance and administrative costs for all affected companies, including small businesses. However, the Regulations were designed to align compliance costs with underlying risks, and to give industry the flexibility to implement security practices that are commensurate with their individual circumstances, risk profiles and operational environments. It is expected that the risks identified and mitigated in the security plan of a large company with hundreds of employees, numerous distribution sites and a nationally integrated distribution network would be more complex and costly than the security plan of a smaller business with few employees and a purely local distribution network. Therefore, although the regulatory requirements will technically be the same for all businesses, compliance activities and associated costs are expected to be lower for small businesses.

Transport Canada considered adopting a more demanding approach by proposing security regulations for the transportation of dangerous goods by rail that are fully aligned with United States hazardous materials security regulations (the "initial option"). Under this option, additional requirements would have included compiling commodity data, conducting route analysis and selection, and providing location and shipping information to Transport Canada. However, preliminary consultations and analysis indicated that this approach might impose a burden that would be disproportionate to the security risks associated with transporting dangerous goods by rail. As a result, Transport Canada is introducing risk-based regulations that are partially aligned with United States regulatory requirements for rail (the "flexible option"), which will be less burdensome on small businesses.

The present value of the total costs to all small businesses (based on an estimated 31 railway carriers and 1,229 railway loaders) is estimated at $6.38 million over the 10-year period, compared to approximately $1.81 million in costs to the 29 medium and large businesses (2 railway carriers and 27 railway loaders). In annualized average terms, the Regulations will cost $2,921 per year per small railway carrier on average (compared to $193,897 per large railway carrier) and $665 per year per small railway loader (compared to $2,381 per large railway loader).

The total incremental compliance and administrative costs imposed on all small businesses are estimated to be $908,110 in annualized value. However, as the annualized value of the total costs to railway carriers and railway loaders is about $721 per small business, it is not expected that these costs would have a significant or detrimental impact on the operation of these companies.

As Table 10 shows, the initial option (i.e. additional requirements for railway carriers) would impose higher costs on small businesses (specifically the railway carriers), increasing the average cost per small business from $721 to $773 over the 10-year period. The increase would be for small railway carriers, as there would be no additional requirements for railway loaders under the initial option. All of the additional requirements are imposed on railway carriers under the initial option.

TABLE 10
Flexibility analysis of the initial and the flexible (targeted) options (constant year 2012 dollars, 2012 present value base year, 7% discount rate)

	Flexible Option		Initial Option	
Short description	Requirements: Security awareness training for railway carriers and railway loaders; Security plan for railway carriers and railway loaders; Security plan training for railway carriers and railway loaders; Security inspection for railway carriers; Security coordinator for railway carriers; and Security reporting for railway carriers.		Requirements: • Security awareness training for railway carriers and railway loaders; • Security plan for railway carriers and railway loaders; • Security plan training for railway carriers and railway loaders; • Security inspection for railway carriers; • Security coordinator for railway carriers; and • Security reporting for railway carriers. Additional requirements for railway carriers: • Commodity data compilation; • Route analysis and selection; and • Providing location and shipping information to Transport Canada.	
Number of small businesses impacted	*1,260*		*1,260*	
	Annualized Average ($2012)	**Present Value ($2012)**	**Annualized ($2012)**	**Present Value ($2012)**
Compliance costs	$907,719	$6,375,435	$973,473	$6,837,264
Administrative costs	$392	$2,752	$392	$2,752
Total costs	$908,110	$6,378,187	$973,864	$6,840,016
Average cost per small business	$721	$5,062	$773	$5,429
Risk considerations	• Requiring the railway carriers to compile commodity data, conduct route analysis and selection may further reduce the security risks associated with transporting dangerous goods by rail in Canada. However, the additional requirements (required in the United States) may not be applicable in Canada because of the different geographical landscape and limited routing options.		• Increased operational costs which may lead to lower compliance rate. • Preliminary consultations and analysis indicated that this approach might impose a burden that is disproportionate to the security risks associated with transporting dangerous goods by rail in Canada.	

Consultation

The Regulations were developed using feedback and input from consultations with industry stakeholders, other government departments and departmental officials over the last several years, and comments received during the *Canada Gazette*, Part I, comment period.

Work on a strategy to enhance the security of the transportation of dangerous goods began in 2009, when Parliament amended the TDGA to provide new federal authorities respecting security. At that time, Transport Canada initiated discussions with industry through established stakeholder fora and bilateral meetings to ensure that the appropriate parties had an opportunity to participate in the risk assessment and policy development process.

Extensive preliminary consultations with the rail and trucking industries took place between November 2011 and February 2013. Those consulted included the Multi-Industry Association Committee on the Transportation of Dangerous Goods,[5] the Federal-Provincial/Territorial Dangerous Goods Task Force,[6] and the Transportation of Dangerous Goods General Policy Advisory Council.[7] Through these committees, Transport Canada was able to reach out to industry associations, including the Railway Association of Canada, the Canadian Trucking Alliance (and the various provincial trucking member associations), the Chemistry Industry Association of Canada, the Canadian Association of Petroleum Producers, and the Canadian Fertilizer Institute.

Industry stakeholders and their associations expressed general support for enhancing the security of the transportation of dangerous goods through regulations. Key messages delivered by industry during preliminary consultations included the following:

- Regulations should be aligned with United States security requirements and United Nations recommendations, with necessary adjustments to address unique Canadian circumstances (i.e. some elements of the United States regime may not be practical or cost-effective in Canada, such as the requirement for route analysis and selection);
- Regulations should be aligned with other government departments' security requirements respecting the transportation of dangerous goods;
- Regulations should be aligned with other parts of the supply chain (e.g. aviation, marine);
- Regulations should be risk-based;
- Regulations should provide flexibility to minimize impact on small companies; and
- Transport Canada should provide practical guidance to industry.

5 The Multi-Industry Association Committee on the Transportation of Dangerous Goods is an industry committee sponsored by the Chemistry Industry Association of Canada (CIAC) that meets biannually. Participants include CIAC member companies and representatives from other trade associations dealing with the transportation of dangerous goods, such as the Canadian Association of Chemical Distributors, the Railway Association of Canada, the Canadian Fertilizer Institute, the Canadian Petroleum Products Institute, the Canadian Association of Petroleum Producers, the Compressed Gas Association, the Canadian Propane Association, CropLife Canada, the Canadian Emergency Response Contractors' Alliance, and the Air Transport Association of Canada.

6 The Task Force provides a forum for provinces, territories and the federal government to exchange information on the transportation of dangerous goods in Canada and to identify and discuss issues relating to the national program. The Task Force meets biannually.

7 Participants include Transport Canada's Dangerous Goods Directorate, industry associations, unions (Teamsters), and various other organizations, such as the Canadian Association of Chiefs of Police, the Shipping Federation of Canada, and the Canadian Volunteer Fire Services Association. This group also meets biannually.

Preliminary consultations included messaging from Transport Canada that the Regulations could apply to both the rail and road (trucking) sectors. However, since that time, the policy direction changed to include only rail. Transport Canada reengaged industry in the spring of 2015 to discuss this change, and to give industry the opportunity to review the proposed requirements. Briefings were held with the Railway Association of Canada (teleconference on March 5, 2015, and meeting on May 9, 2016), the Transportation of Dangerous Goods General Policy Advisory Council (teleconference on March 13, 2015, and meetings on May 28, 2015, and May 26, 2016), the Transportation of Dangerous Goods Federal-Provincial/Territorial Task Force (teleconference on March 20, 2015) and the Multi-Industry Association Committee on the Transportation of Dangerous Goods (teleconference on March 27, 2015, and meetings on May 27, 2015, November 17, 2015, and May 25, 2016). Industry stakeholders remained generally supportive of the regulatory approach and provided the following feedback:

- **Application:** Industry asked why trucking was excluded from the proposal. Transport Canada explained that regulating both sectors would take significantly more time and resources to implement, given the size and complexity of the trucking industry. Further, it is necessary to implement a timely baseline security regime for the transportation of dangerous goods by rail, given recent events which have shown the impact that rail incidents involving dangerous goods can have on public safety, the environment and the economy. Though these incidents were safety-related, they also highlighted the security risks.
- **Security plans:** Industry asked whether Transport Canada would approve the security plans, and who would have access. Transport Canada explained that railway carriers and consignors (the term "consignor" has since been replaced with "railway loader" in order to better clarify who will be captured by the Regulations) would not be required to submit their plans to Transport Canada for approval, but would be required to make their plans available to the Minister of Transport upon request.
- **Security plan training:** Stakeholders requested that Transport Canada ensure that the security plan training requirement be aligned with United States security requirements, to reduce implementation costs for industry.
- **The list of dangerous goods that trigger security plan and training requirements:** Industry questioned whether the list of security-sensitive dangerous goods was harmonized with that of the United States and whether it included all pertinent goods. Transport Canada worked with experts to develop and refine the list, and attempted to align it with the United States list, with a few adjustments that are better suited to the Canadian context (e.g. the Canadian list includes substances regulated under the *Human Pathogens and Toxins Act*, whereas the United States list includes select agents or toxins regulated by the Centers for Disease Control and Prevention or the United States Department of Agriculture).

Since 2010, Transport Canada has also consulted the United States Transportation Security Administration on this initiative through the Transportation Security Cooperation Group, to obtain background information and compare systems in terms of alignment.

Prepublication in the *Canada Gazette*, Part I

The proposed Regulations were published in the *Canada Gazette*, Part I, on June 24, 2017, followed by a 30-day public comment period. The 30-day comment period provided an opportunity for industry stakeholders and the general public to submit their comments/suggestions. Sixteen submissions were received from various transportation of dangerous goods companies and major industry associations. Comments received were taken into consideration in the development of the Regulations.

Industry stakeholders and their associations expressed general support for enhancing the security of the transportation of dangerous goods by rail through the Regulations. Support was expressed for Transport Canada's mission to promote a safe, secure, efficient and environmentally responsible transportation system and the importance of security in the safe transportation of dangerous goods. Industry also supports Transport Canada's effort to enhance alignment between Canadian and United States regulations that would facilitate the movement of dangerous goods by rail across the border. Moreover, industry has expressed support of the flexible approach adopted by the Regulations which provide the regulated entities with the flexibility to develop and implement security practices that are commensurate with their individual risk profiles and operational environments.

Industry also provided comments and suggestions in the following areas in terms of how to improve the proposed Regulations:

- **Application of consignor:** Stakeholders expressed that the application of consignor was unclear. More specifically, industry recommended that Transport Canada clarify the definition of consignor to ensure that the intended parties/operations are captured within the Regulations. In response to industry feedback, Transport Canada has replaced the term "consignor" with "railway loader" in order to better clarify who will be captured by the Regulations. A concise definition of railway loader is provided in the Regulations.
- **Scope of security awareness training and security plan training:** Various stakeholders commented that the scope of awareness training and the topics for security plan training were too broad and recommended that all training be limited to what is relevant to a person's security role. In response to stakeholder feedback, Transport Canada has narrowed the scope of both the security awareness and security plan training requirements. The application of awareness training has been revised to capture persons who, in the course of employment, directly affect dangerous goods transportation security. The scope of the security plan training requirement has been revised from "on the entire plan" to component(s) of the security plan that are relevant to the person's duties.
- **Recognizing existing security awareness and security plan training:** Stakeholders requested that Transport Canada accept pre-existing training that is completed before the date that the Regulations come into force if they meet the requirements of the Regulations. In response to stakeholder feedback, Transport Canada has revised the security awareness and security plan training requirements to recognize previous training. More specifically, existing security awareness and security plan training will be recognized for, at most, three years from the previous training date, as long as the training meets the requirements outlined in the Regulations.
- **Thresholds for certain classes of Schedule 1 (the list of security-sensitive dangerous goods):** Industry stakeholders recommended that Transport Canada revise the volume thresholds of certain security-sensitive dangerous goods listed in Schedule 1. In response to industry feedback, Transport Canada has revised several items in Schedule 1. For example, the threshold in items 6 and 7 has been increased from 3,000 L to 10,000 L.

Transport Canada has responded to all submissions requiring answers or clarifications and has taken these comments and suggestions into account in the refinement of the regulatory package. Transport Canada has also done further analysis to address specific comments. For example, Transport Canada has revised the contact for reporting potential threats and other security concerns (for the railway carriers) from the Canadian Transport Emergency Centre (CANUTEC) to the Transport Canada Situation Centre in the consideration of their expertise in dealing with security incidents.

Regulatory cooperation and international alignment

The United Nations has developed Model Regulations to encourage the uniform development of national and international transportation of dangerous goods requirements. The Model Regulations are widely accepted internationally, and form the basis of several international agreements and national regulatory regimes, including in the United States. The Regulations are generally aligned with the recommended security provisions in the United Nations Model Regulations (section 1.4), which include security training for employees and security plans for high consequence dangerous goods, such as those explosives included in Class 1.1, 1.2, or 1.3.

The Regulations will introduce Canadian requirements that partially align with United States requirements for the transportation of dangerous goods by rail (*Hazardous Materials Regulations* — Title 49 of the *Code of Federal Regulations* [49 CFR], sections 172.700 to 172.704, 172.800 to 172.822, 174.9, 174.14 and *Rail Transportation Security Regulations* — 49 CFR, Part 1580). The Regulations are consistent with the basic HAZMAT security requirements for rail in the United States, but do not include the more stringent requirements, such as compiling commodity data, conducting route analysis and selection, providing a secure chain of custody and control, expediting movement, and providing location and shipping information to the Government. This approach will facilitate the timelier implementation of a baseline security regime for the transportation of dangerous goods by rail in Canada. Further analysis of the additional United States rail requirements will be necessary to determine whether they are applicable in the Canadian context and commensurate with risk (i.e. considering the Canadian geographical landscape and the limited rail system in Canada).

The Regulations are consistent with the objective of the Canada–United States Regulatory Cooperation Council, which is to better align Canada–United States regulatory approaches to make it easier for industry to do business on both sides of the border.

Transport Canada has also engaged federal partners with roles and responsibilities respecting the transportation of dangerous goods through the Transportation of Dangerous Goods Interdepartmental Working Group, to ensure coordination and to avoid duplicative or inconsistent regulatory requirements.

Rationale

Strategic risk assessments conducted by Government of Canada security experts have indicated that the transportation of dangerous goods by rail is vulnerable to misuse or sabotage by terrorists. An attack using dangerous goods is feasible, and the adverse impacts of a terrorist event could be significant. This level of risk supports the need to develop security regulations for the transportation of dangerous goods by rail, to strengthen the security of this sector and assist in protecting Canadians.

Moreover, Canada's current regime is inconsistent with that of its largest trading partner, the United States. The regulatory requirements will allow Canada to better align its requirements with United States hazardous materials security requirements, which would facilitate the cross-border movement of dangerous goods by rail.

Based on an analysis of various options, stakeholder feedback, an assessment of international standards and requirements and the level of risk within the sector, Transport Canada considers the development of management-based regulations for railway carriers and railway loaders to be the most appropriate and effective course of action at this time. This approach would facilitate the timelier implementation of a baseline security regime for the transportation of dangerous goods by rail.

The Regulations are not expected to create any undue costs or burden for the rail industry. This is due, in part, to the fact that many operators already comply with the regulatory requirements (e.g. those that transport dangerous goods to the United States, those that participate in trusted trader programs [Canada's Partners in Protection program and the United States Customs-Trade Partnership Against Terrorism], and those that are signatories to the Railway Security Memorandum of Understanding with Transport Canada). As well, the Regulations have been designed to be risk-based, which will give industry the flexibility to adopt security practices that are tailored to their operations and proportionate to their risk.

Implementation, enforcement and service standards

Transport Canada's objective is to implement a fair and equitable compliance and enforcement regime for the Regulations, using a graduated approach that allows industry to take corrective actions before resorting to enforcement actions. However, where compliance is not achieved on a voluntary basis or where there are flagrant violations, enforcement action could be sought through judicial sanction (indictment or summary conviction) in accordance with paragraphs 33(2)(a) and (b) of the TDGA.

Transport Canada is ready to successfully implement, deliver and oversee the Regulations. The Department will use a national network of surface and intermodal security inspectors to oversee compliance with the Regulations, and is currently developing guidance and training programs to ensure the inspectors will be adequately prepared to oversee this new regime and facilitate industry compliance. The Department will work to coordinate the oversight regime with the rail safety and transportation of dangerous goods safety oversight regimes (e.g. by conducting joint safety and security inspections), to enhance efficiency and minimize the impact on railway carriers and railway loaders.

Inspectors will provide regulatory oversight to ensure compliance and identify any non-compliance with the Regulations. Inspectors will provide ongoing oversight, guidance and education to railway carriers and railway loaders, and will schedule inspections using a risk-based approach. Current risk methodology will be reviewed and elements will be incorporated to support, align and produce a custom security risk assessment methodology. Inspection frequency and scope will be determined by the outcome of the risk assessments. Inspections will be at determined intervals; however, inspectors will have the flexibility to conduct random and for-cause inspections, as deemed appropriate.

Transport Canada will continue its engagement with industry through established transportation of dangerous goods fora and the various industry associations. Transport Canada will also conduct education and awareness activities to support industry and to facilitate implementation and compliance, and will develop guidance materials, as required.

Finally, the coming-into-force dates of the Regulations will be staggered to give railway carriers and railway loaders sufficient time to implement the requirements and to facilitate compliance, in accordance with the schedule set out in Table 11.

TABLE 11
Staggered coming-into-force dates

Requirement	Who?	Length of Time After Registration Before Coming into Force
Reporting	Railway carriers	1 month
Rail security coordinator	Railway carriers	3 months
Security inspection	Railway carriers	3 months
Security awareness training	Railway carriers	9 months
	Railway loaders	12 months
Security plan and risk assessment	Railway carriers	9 months
	Railway loaders	12 months
Security plan training	Railway carriers	9 months
	Railway loaders	12 months

