



Dangerous Goods and Rail Safety

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

Transportation of Infectious Substances

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Alberta 

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

Alberta EDGE (Environmental and Dangerous Goods Emergencies)

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

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OVERVIEW

Introduction

It is estimated that only 10% of the 100 million medical laboratory specimens transported annually in Canada are infectious. Health care professionals in medical or research laboratories and in clinics must deal with these specimens in a safe manner yet the transportation of these items must not be made too difficult or expensive.

Transportation of Dangerous Goods (TDG) Regulations classifies Infectious Substances into two categories: Category A or Category B.

For clarification, the criteria for classifying micro-organisms into four Risk Groups is normally used in microbiology laboratories and medical facilities and was originally developed by the World Health Organization. The criteria is based on the risks that micro-organisms pose in the laboratory environment and do not appropriately reflect the lesser risks they pose in transport. The risk group criteria is designed to establish containment levels for specimens in a laboratory that would protect employees who directly handle and manipulate specimens.

Universal Precautions

The health care profession is taught to handle all samples and specimens as though they were hazardous when only a small fraction of them are infectious. The TDG Regulations do not dispute this universal precaution - it is a workplace policy. Many specimens, however, are not considered dangerous by the TDG Regulations and therefore are not handled in the same way as regulated specimens. Health care professionals should review their current practices when preparing a specimen or culture for shipment.

What Is an Infectious Substance?

The TDG Regulations define an infectious substance 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. [Section 1.4].

The "substance" might be blood, tissue, organs, bodily fluids or cultures. The numbers and types of disease causing micro-organisms is well known to medical researchers.

How infectious is this specimen?

Infectious substances have been grouped into two categories according to degrees of hazard. Part 1.4 of the TDG Regulations defines the categories:

- 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. Category A consists of Virus and Bacteria listed in the first four Tables in Appendix 3 to Part 2 of the TDG Regulations.

- Category B means an infectious substance that does not meet the criteria for inclusion in Category A. Category B consists of Virus, Bacteria and Fungi listed in the last three tables in Appendix 3 to Part 2 of the TDG Regulations.

Category B infectious substances present less risk because they are not easily transmissible and basic precautions and hygienic practices will serve to prevent infection in the event of an incident.

How do we classify Infectious Substances?

Infectious Substances are included in Class 6.2 of the TDG Regulations. The lists of Category A and B infectious organisms are in Part 2, Appendix 3 of the TDG Regulations. The lists however, are not exhaustive or complete and are used to provide guidance for classification only. Agents that exhibit characteristics similar to a substance in the lists should also be included in the classification.

- Category A is identified by two UN numbers and shipping names,
UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS
UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only
- Category B is identified by one UN number and shipping name,
UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B

Assistance for classifying infectious substances may be obtained from the **Public Health Agency of Canada (PHAC) – Office of Laboratory Biosecurity** at (613)957-1779 or email: *PHAC.pathogenes.ASPC@canada.ca*

You may also obtain assistance by calling the **Dangerous Goods and Rail Safety Section of Alberta Transportation** at 1-800-272-9600 (toll free within Alberta) or at (780)422-9600.

(1) Substances are included in Class 6.2, Category A or Category B if they are infectious substances and are listed in Appendix 3 to this Part or exhibit characteristics similar to a substance listed in that appendix [Section 2.36 (1)].

(2) Infectious substances that are included in Category A and that are in a form other than a culture may be handled, offered for transport or transported as Category B in accordance with the conditions set out in paragraphs 1.39(a) to (c) of Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases [Section 2.36 (2)].

(3) Despite subsection (2), the following infectious substances included in Category A, and any substance that exhibits characteristics similar to these substances, must always be handled, offered for transport or transported as Category A [Section 2.36 (3)]:

- (a) Crimean-Congo Hemorrhagic fever virus;
- (b) Ebola virus;
- (c) Flexal virus;
- (d) Guanarito virus;
- (e) Hantaviruses causing hemorrhagic fever with renal syndrome;
- (f) Hantaviruses causing pulmonary syndrome;
- (g) Hendra virus;
- (h) Herpes B virus (Cercopithecine Herpesvirus-1);
- (i) Junin virus;
- (j) Kyasanur Forest virus;
- (k) Lassa virus;
- (l) Machupo virus;
- (m) Marburg virus;
- (n) Monkeypox virus;
- (o) Nipah virus;
- (p) Omsk hemorrhagic fever virus;
- (q) Russian Spring – Summer encephalitis virus;
- (r) Sabia virus; and
- (s) Variola (smallpox virus).

Medical or Clinical Waste?

Dangerous goods that are medical or clinical waste must be classified

1. Under UN2814 or, as applicable, under UN2900, if they contain Category A infectious substances;
2. Under UN3291, if they contain Category B infectious substances; or
3. Under UN3291, if the shipper has reasonable grounds to believe that they have a low probability of containing infectious substances.

Are Routine Blood Samples considered Infectious Substances?

A routine blood test sample may or may not be an "Infectious Substance" according to the TDG Regulations. If the health professional has reason to believe that the sample contains an infectious micro-organism in Category A or B, it must be declared on the shipping document as "INFECTIOUS SUBSTANCE, AFFECTING HUMANS" OR "BIOLOGICAL SUBSTANCE, CATEGORY B". The above decision is made, not according to statistical probability, but a real belief that a particular sample has an infectious microorganism in it. This is a judgement that the health care professional must make according to factors such as medical history, symptoms and so on.

An important point to remember is that there is no loss of doctor-patient confidentiality by declaring the specimen an "Infectious Substance" on the shipping document, or on the requisition to the laboratory, since there are many organisms under the Infectious Substance category. Laboratory personnel are instructed to keep such information confidential as well.

The following examples are intended to help clarify the situation. For additional information, please refer to the EXEMPTION Section of this publication.

- A. Routine blood sample taken from persons who are not suspected to have an infectious disease caused by one of the organisms listed in Appendix 3 of Part 2 of the TDG Regulations, are exempted in the "Human or Animal Specimens Believed Not to Contain Infectious Substances Exemption" [Section 1.42].

In order to use the exemption, the specimens must be contained in a Type 1B or Type 1C package, or 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 specimens, with the words "Exempt Human Specimen" marked on it. These are specimens taken for routine tests, such as a pregnancy test, blood chemistry test, blood cell count and deferential test.

- B. The following specimens are all regulated as Class 6.2, Infectious Substances, under the TDG Regulations:

A patient is known to have an infectious disease and is being tested for something else. This second test may be for an organism listed in Appendix 3 of Part 2, or it could be a chemistry test - for diabetes, as an example. If there is a likelihood that the material being submitted has an infectious substance in it, the person shipping it declares it as an "INFECTIOUS SUBSTANCE, AFFECTING HUMANS" or "BIOLOGICAL SUBSTANCE, CATEGORY B".

A specimen is taken to check for a suspected disease. It is not known if the patient has the disease, but the probability warrants asking for the test. This is based on the medical professional's experience as a diagnostician and their judgment after examining the patient. The sample should be sent as an "INFECTIOUS SUBSTANCE, AFFECTING HUMANS" or "BIOLOGICAL SUBSTANCE, CATEGORY B".

DOCUMENTATION

You must prepare a shipping document if you are shipping Category A Infectious Substance (UN2814 or UN2900)

However, you do not need a shipping document if you are shipping a Category B Infectious Substance (UN3373) [Section 1.39]. Please be reminded that Category A Infectious Substances can be shipped as Category B Infectious Substances if it is NOT in culture form.

It is the responsibility of the consignor to prepare a proper shipping document when offering dangerous goods for transportation. The document is similar to a standard bill of lading but must contain information needed to describe the dangerous goods. According to Section 1.4 of the Transportation of Dangerous Goods Regulations, the definition of the shipping document must be in paper format, electronic format is not acceptable. The shipping document is handed over to the initial carrier and must accompany the consignment throughout its journey [Sections 3.1 and 3.2]. The consignor and each carrier that transported dangerous goods shall retain a copy of the shipping document for a period of two years [Section 3.11].

The following is the minimum required information which must appear on a shipping document:

Shipping Document Information	When Required	Where in The Regulations
Date	Always	3.5(1)(b)
Name and address of consignor	Always	3.5(1)(a)
Description of goods in the following order		3.5(1)(c)
a. UN number	Always	3.5(1)(c)(i)
b. Shipping name	Always	3.5(1)(c)(ii)
c. The technical name of the most dangerous substance related to the primary classification	If Provision 16 of Schedule 2 applies	3.5(1)(c)(ii)(A)
d. Primary classification	Always	3.5(1)(c)(iii)
e. Subsidiary classifications	If Any	3.5(1)(c)(iv)
f. Packing group	If Any	3.5(1)(c)(vi)
The quantity in the International System of Units (SI) ^{1, 2}	Always	3.5(1)(d)
The number of containers ²	For dangerous goods in small containers requiring safety labels	3.5(1)(e)

<p>The words “24-Hour Number” followed by a telephone number where the consignor can be easily reached³</p>	<p>Always</p>	<p>3.5(1)(f)</p>
<p>Consignor’s Certification⁴</p>	<p>Always</p>	<p>3.6.1</p>
<p>Emergency Response Assistance Plan (ERAP) number and telephone number to activate it</p>	<p>Category A, Class 6.2 requires an ERAP</p>	<p>3.6(1), S.P. 84</p>

Note:

1. If the quantity of dangerous goods is less than 10% of the container’s capacity then the words “Residue – Last Contained” followed by the shipping name of the dangerous goods last contained in the means of containment may be used to describe the quantity. This does not apply to Class 2 gases in small containers and Class 7 radioactive substances [Section 3.5(4)].
2. If the quantity of dangerous goods or the number of small means of containment changes during transport, the carrier must show on the shipping document or on a document attached to the shipping document the change in the quantity of dangerous goods or the number of small containers [Section 3.5(5)].
3. A consignor can also use the telephone number of an agency that is competent to give the technical information on the shipment. For example, it is possible to use CANUTEC as a source of technical information provided that the consignor has received permission in writing from CANUTEC [Subsection 3.5(2)].
4. The Consignor’s Certification: “I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, are properly classified and packaged, have dangerous goods safety marks affixed or displayed on them, and are in all respects in proper condition for transport according to the Transportation of Dangerous Goods Regulations.” [Section 3.6.1]

Infectious substances shipped by air must be documented in a prescribed form known as "Shipper’s Declaration of Dangerous Goods". For details of alternate and additional documentation requirements, consult Part 3 of the TDG Regulations or call the Dangerous Goods and Rail Safety Section of Alberta and Transportation at 1-800-272-9600 (toll free within Alberta) or at (780)422-9600.

TRAINING AND CERTIFICATION

Anyone who handles, offers for transport or transports dangerous goods must have a valid Transportation of Dangerous Goods Training Certificate or must be under the direct supervision of a trained person [Section 6.1].

TDG training is in addition to the professional or on-the-job training that laboratory workers and health care professionals receive. It is understood that such workers are trained to properly handle specimens and that they understand the hazards associated with infectious substances. The TDG training certificates verify that the worker has had additional training in the preparing and offering of dangerous goods for transport, and would mostly be concerned with document preparation and selection of proper packaging.

A person is adequately trained if the person has sound knowledge of the topics listed below that relate directly to the person's duties [Section 6.2]:

- classification of dangerous goods, shipping names, UN numbers, packing groups;
- shipping documentation;
- safety marks;
- certification safety marks, safety requirements and safety standards;
- emergency response assistance plan requirements;
- reporting requirements;
- safe handling and transportation practices;
- proper use of equipment; and
- emergency measures to take in case of releases.

The employer issues a training certificate when he/she has reasonable grounds to believe that an employee possesses adequate training. A training certificate must contain the following information. The training certificate may be in paper or electronic format.

A training certificate must contain the following information [Section 6.3]:

- the name and address of the employer,
- the name of the employee,
- the date when the training certificate expires, 36 months after being issued,
- the aspects of handling, offering for transport or transporting dangerous goods for which the employee is trained, and
- the signatures of the employer and the employee

Self-employed people can issue training certificates for themselves. The employer must keep a record of the training that the employee has received and a copy of his/her training certificate two years after the expiration date [Section 6.6]. The training certificate must be immediately presented to an inspector who requests for it [Section 6.8].

PACKAGING

The key to efficient control and minimization of risk during transport of infectious substances lies in the use of appropriate packaging. Appropriate packaging provides the necessary and sufficient barriers to prevent leakage of the substance from the package. Triple packaging, required for both Category A and Category B substances, comprises a leak proof primary packaging which is packed in a leak proof secondary packaging in such a way that it cannot break, be punctured or leak the contents into the secondary packaging. The leak proof secondary packaging is secured in a strong outer packaging. Absorbent materials are placed between the primary packaging and the secondary packaging in a quantity sufficient to absorb the entire contents of the primary packaging. The use of triple packaging has over the years provided effective containment of infectious substances.

The packaging requirements for Category A and Category B infectious substances are listed in the table to Section 5.16 of the TDG Regulations.

Packaging Standards

The TDG Regulations specify adequate packaging for the transportation of infectious substances. Class 6.2 dangerous goods must be transported in means of containment in compliance with CAN/CGSB-43.125-2016, "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. This standard specifies the requirements for packaging infectious substances in three types of packaging: Type P620, Type P650 and Standardized and non-standardized packagings permitted in Part III of the standard. Type P620 is a high integrity package; Type P650 is for routine uses; and the Standardized and non-standardized packagings permitted in Part III of the Standard is for waste.

Type P620 Packaging

Type P620 is used where a high integrity package is required. Type P620 is based on the design and marking requirements of Section 5.1 of the Standard and Packing Instruction 620 of the UN Recommendations on the Transport of Dangerous Goods, Model Regulations.

The package shall include:

- A. An inner packaging comprising:
 - I. Leakproof primary receptacle(s);
 - II. Leakproof secondary packaging;

For liquid substances, an absorbent material must be placed between the primary receptacle(s) and the secondary inner packaging and in sufficient quantity to absorb the entire contents of the primary receptacle(s)

- B. An outer packaging of adequate strength for its capacity, mass and intended use of which the smallest external dimension is at least 100 mm.

Substances consigned at ambient temperature or higher must be placed in primary receptacles made of glass, metal or plastics. A positive means of ensuring a leak proof seal must be provided.

Refrigerated and frozen substances must be transported with *ice* or *dry ice* placed outside the secondary packaging(s). Interior supports must be provided to ensure that the secondary packaging is secured in place. If *ice* is used the outer packaging must be leak proof. If *dry ice* is used the outer packaging must permit the release of carbon dioxide gas. The primary receptacle and secondary packaging must maintain their integrity at the temperature of the refrigerant used.

Substances consigned in *liquid nitrogen* must be transported in packaging that can withstand very low temperatures and that can retain its integrity at liquid nitrogen temperatures. Provisions for the consignment of liquid nitrogen must also be fulfilled.

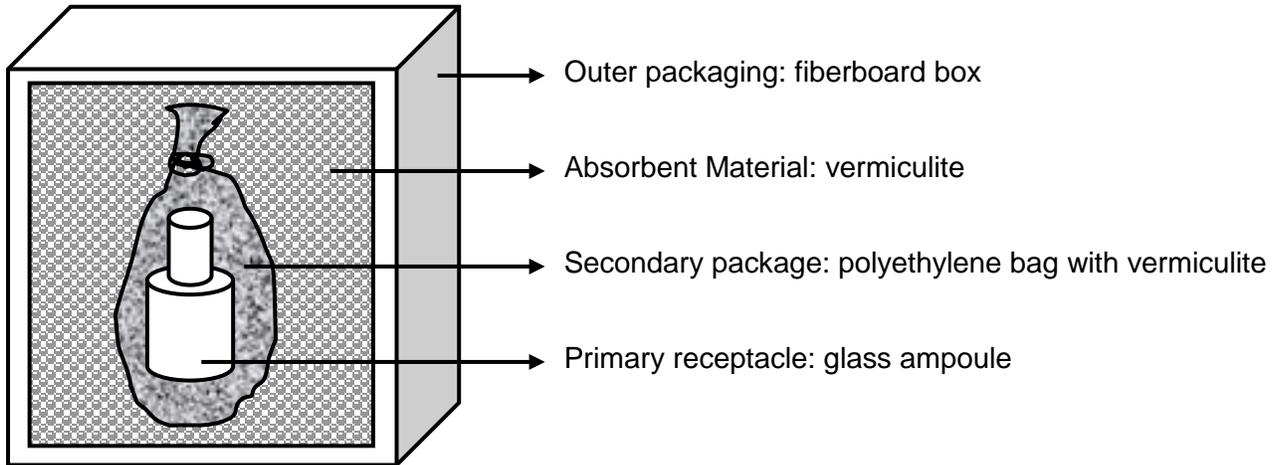
Type P620 packaging must pass tests for internal pressure, drop resistance, impact resistance and quality assurance. The manufacture and testing of Type P620 packaging must be done by facilities registered with Transport Canada.

The outer surface of the packaging must have several markings including:

- the United Nations packaging symbol  ;
- the code designating the type of package in accordance with Paragraph 8 of CAN/CGSB-43.125-2016 (such as 4G for fibreboard box or 4GU for special packaging met more stringent requirements or 4GW is manufactured to equivalent to the CGSB standard requirements);
- the text "CLASS 6.2";
- the last two digits of the year of manufacture (such as "16 or 17");
- The state authorizing the allocation of the mark (the letters "CAN" for packages manufactured in Canada);
- the name or symbol of the manufacturer and the Transport Canada Design Registration Number; and
- For packages meeting the requirements for inner receptacles, the letter U.

Example of a Type P620 Package

A glass ampoule wrapped in a polyethylene bag in a cardboard box with vermiculite absorbent material



Corresponding Package Markings

4G represents a cardboard box. CAN means that the packaging was manufactured in Canada. ABC is the manufacturer symbol. 8-999 is the Transport Canada Design Registration Number.



4G / Class 6.2 / 17
CAN / ABC 8-999

Type P650 Packaging

Type P650 is suitable for routine shipments (e.g. biological product).

The package shall consist of the following components:

1. The inner package:
 - a. Leakproof or siftproof primary receptacle(s);
 - b. Leakproof or siftproof secondary packaging;
2. The rigid outer packaging with at least one surface having a minimum dimension of 100 mm x 100 mm strong outer packaging.

For liquid substances, an absorbent material must be placed between the primary receptacle(s) and the secondary inner packaging and in sufficient quantity to absorb

the entire contents of the primary receptacle(s) so that any release will not compromise the integrity of the cushioning material or of the outer packaging.

For solid substances, if there is any doubt as to whether or not residual liquid may be present, then a packaging suitable for liquids, including absorbent materials shall be used.

Standardized and non-standardized packagings are permitted in Part III of the CAN-CGSB-43.125

This type of packaging is suitable for the transportation of Infectious substances intended for disposal or clinical, biomedical or regulated medical waste.

Biomedical waste designated as non-infectious by a medical professional is not subject to the requirements of packaging standard CAN/CGSB-43.125-2016. The same is true of biomedical waste decontaminated using a process that is deemed acceptable by a medical professional.

This type of packaging can be of different variations, either single or combination packaging.

- a. UN standardized small container for packing group I or II, for liquids or solids. If the container is not leak proof, a plastic bag with Elmendorf tear and Dart impact strength as specified in the CAN/CGSB-43.125 standard, shall be inserted in the container to contain any possible release of liquids. The small container can be drums, jerrican, box, or intermediate bulk container (IBC). It could also be a packaging that complies with an alternate standard listed in CAN/CGSB-43.146.
- b. UN standardized rigid and leakproff large packagings for packing group II, for liquis or solids meeting the requirements of Chapter 6.6 in UN Recommendations and the Regulations of the country of origin and marked accordingly.
- c. A non-standardized combination packaging consisting of a securely-closed plastic bag with Elmendorf tear and Dart impact strength as specified in the CAN/CGSB-43.125 standard and is contained in a securely closed outer packaging that is: 1. Rigid, leakproof and designed for repeated use; or 2. A single or double wall fibreboard box as specified in the CAN/CGSB-43.125 standard.
- d. A Type P620 packaging

SHARPS CONTAINER: A sharps container must meet the requirements of standard CAN/CSA-Z316.6-95; or be rigid, leak proof and designed for repeated use.

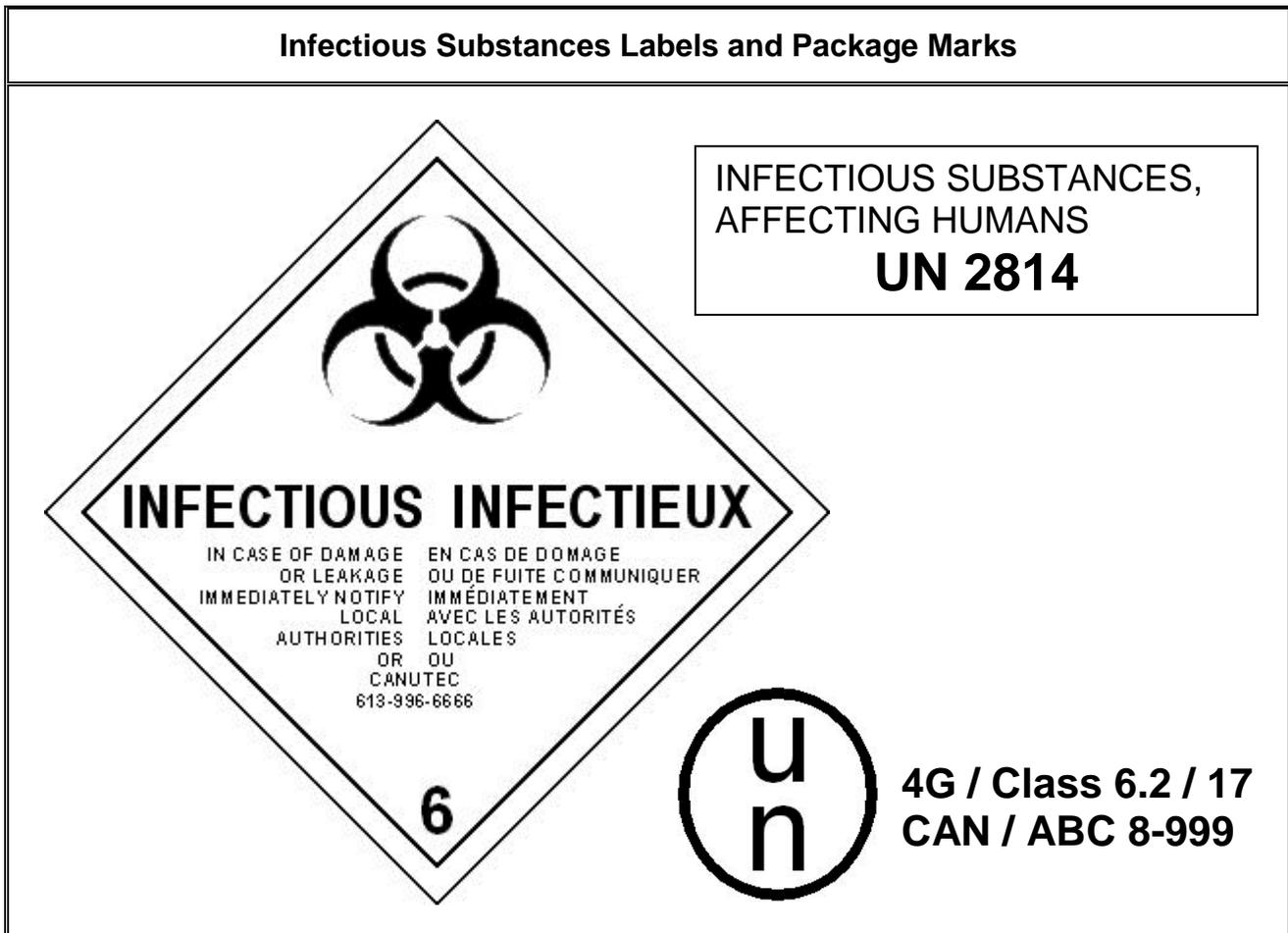
Selection and Use of Packaging for Infectious Substances

Category	Type of Packaging
Category A - UN2814, UN2900 Category B - UN3373 Waste - UN3291	Type P620
Category B - UN3373 (including “non-culture” Category A infectious substances that can be shipped as Category B, except for Infectious Substances listed in subsection 2.63(3) of the TDG Regulations) Waste - UN3291	Type P650
Category A Infectious Substances intended for disposal (except for Infectious Substances listed in subsection 2.63(3) of the TDG Regulations) - UN2814, UN2900 Waste - UN3291	Standardized and non-standardized packagings permitted in Part III of the CAN-CGSB-43.125 Standard

INFECTIOUS SUBSTANCES - LABEL AND PLACARD

Category A Label

In addition to the appropriate markings required by CAN/CGSB 43-125, the outer package must have a class 6.2 label affixed to it. Also, both the shipping name, INFECTIOUS SUBSTANCE, AFFECTING HUMANS and the UN number, UN2814; or INFECTIOUS SUBSTANCE, AFFECTING ANIMALS and the UN number, UN2900 must be printed on the outside of the package near the label.



The label for Class 6.2 is a white background with black lettering.

Category B Mark (Label)

In addition to the appropriate markings required by CAN/CGSB 43-125, the Category B mark illustrated in the appendix of Part 4 must be displayed on the small means of containment containing infectious substances included in UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B.



**BIOLOGICAL
SUBSTANCE,
Category B**

24-Hour Number : 780-XXX-XXXX

Letters and numbers are in black at least 6 mm high and line with a width of at least 2 mm, with a white background except that the background may be the color of the means of containment if it contrasts with the letters, numbers and line. The size of the label must be at least 50 mm on each side.

Infectious Substances Placard

Since the Emergency Response Assistance Plan Index (ERAP Index) refers to Special Provision 84 in Column 7 of Schedule 1 for Infectious Substances in Category A, any amount of the substances listed in Section 7.1(7) (see details on Page 25) must have Class 6.2 placards on all four sides of a large mean of containment. Otherwise, placards are required for Class 6.2 shipments of more than 500 kg, such as biomedical waste from the hospital [Section 4.16.1].

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

Example of Placards for a Large Means of Containment
In this case the product is
INFECTIOUS SUBSTANCE, AFFECTING HUMANS, UN 2814



The placards must be displayed on each side and each end of a large means of containment. The placards may be displayed on the frame of the means of transport or the frame directly attached to the large means of containment. The placard may also be placed at the front of a truck instead of the front of a cargo unit attached to the truck [Section 4.15(3)].

EXEMPTIONS

Class 6.2, Infectious Substances, Category B Exemption (Section 1.39):

Part 3, Documentation, and Part 4, except 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 is flat and 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.

Biological Products Exemption (Section 1.41):

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 (Accidental Release and Imminent Accidental Release Report 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 accidental 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” in black letters at least 6 mm high on a contrasting background.

Human or Animal Specimens Believed Not to Contain Infectious Substances Exemption (Section 1.42):

(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 (Accidental Release and Imminent Accidental Release Report 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 “Exempt Animal Specimen” 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.

Tissues or Organs for Transplant Exemption (Section 1.42.1):

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

Blood or Blood Components Exemption (Section 1.42.2):

(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 (Accidental Release and Imminent Accidental Release Report 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

(a) that is a Type 1B means of containment or Type 1C means of containment;

or

(b) 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.

Medical or Clinical Waste (Section 1.42.3):

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

Part 3 (Documentation), sections 4.7 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 (Accidental Release and Imminent Accidental Release Report Requirements) do not apply to the handling, offering for transport 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".

OTHER MODES OF TRANSPORTATION

Shipments of infectious substances by the marine mode of transport are regulated by the IMDG Code when the substances are transported between Canada and another country, outside Canada or on a Class I home-trade voyage within Canada.

Shipments of infectious substances by air mode are more rigidly controlled than by any other mode of transport. Air shipments are regulated by the TDG Regulations and the International Civil Aviation Organization (ICAO). When shipping any dangerous good, including infectious substances by air, a special shipping document called the "shippers declaration" must be used. In most cases the air mode will require that the infectious substance be shipped in a high-integrity package (type 1A) even when a routine package (type 1B) will do for ground shipments.

RELEASE OF INFECTIOUS SUBSTANCES REPORT REQUIREMENT (PART 8)

In the event of a release or anticipated release of dangerous goods (herein referred to as an event), the person in possession of the dangerous goods at the time of the event must make an Emergency Report to the local authorities as soon as possible. An emergency report is required when the quantity of dangerous goods that was or may have been released exceeds the amount set out in the following table (Section 8.2) or for any potential release of dangerous goods. For more information on reporting requirements, request the Alberta EDGE's information bulletin entitled Emergency, Release or Anticipated Release Report Requirements.

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	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 "Packing and Transport of Nuclear Substances Regulations, 2015"
6.1		5 kg or 5 L
6.2		Any quantity
9	II or III or without packing group	30 L or 30 kg

A local authority is any organization which may be responsible for emergency response at the location of the release or anticipated release. In Alberta, these include:

- the local police or RCMP, and
- Alberta EDGE

ENVIRONMENTAL AND DANGEROUS GOODS EMERGENCIES

DANGEROUS GOODS & RAIL SAFETY

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Edmonton area: 780-422-9600



The person making the Emergency Report must also make a Release or Anticipated Release Report as per Section 8.4 to CANUTEC (1-888-226-8832 or 613-996-6666) if:

- a fatality occurred;
- there were any injuries caused by exposure to the dangerous goods which required medical treatment by a health care provider;

- an evacuation occurred or people sheltered in place;
- a loading or unloading facility, road, main rail line or main waterway was closed;
- the container became damaged enough to compromise its integrity; or
- the centre sill or stub sill of a tank car was broken or there is a crack in the metal equal to or greater than 15 cm (6 in.)

If a report is required to CANUTEC, the person must also report the incident to the consignor of the dangerous goods.

The information that must be included in the Emergency or Release or Anticipated Release Report is:

- the name and contact information of the person making the report;
- the date, time and location of the event;
- the mode of transport used (including a description of the container);
- the shipping name or UN number of the dangerous goods;
- the quantity of dangerous goods initially in the container;
- the quantity of dangerous goods released (if applicable);
- the type of incident leading to the event (for example: collision, roll-over, derailment, overfill, fire, explosion or load-shift);
- the name and geographic location of any road, main railway or main waterway that was closed (if applicable);
- the number of people evacuated or sheltered in place (if applicable); and
- the number of fatalities or injures (if applicable).

A report can also include other information not required by the regulations (for example, any cleanup arrangements, or involvement of other emergency response agencies like the police, fire department, Alberta Environment and Parks or the Alberta Energy Regulator).

After submitting a Release or Anticipated Release report to CANUTEC, the person or employer of the person who made the report must submit a 30-day follow-up report to the Dangerous Goods Directorate of Transport Canada [Section 8.8]. The 30-Day Follow-up Report must include the following information:

- name and contact information of the person submitting the report;
- date, time and location of the event;
- names and contact information of the consignor, carrier and consignee;
- the mode of transport;
- classification of the dangerous goods;
- quantity of dangerous goods in the container before the event occurred;
- the quantity of dangerous goods released (if applicable)
- a description of the container involved and a description of the failure or damage including how the event occurred;
- information about the conditions leading to the event;
- information on any fire or explosion (if applicable);
- the name and location of any facility that was closed, and the duration of the closure;

- the name and location of any road, main railway line or main waterway that was closed, and the duration of the closure
- number of deaths and injuries (if applicable);
- an estimate of the number of people evacuated, if any; and
- the ERAP reference number (if applicable);
- the date the initial verbal report was made; and
- an estimate of the financial loss as a result of the release/anticipated release and any associated, emergency response or remediation.

A 30 day report must be kept for two years after the day which it was made. They 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.

EMERGENCY RESPONSE ASSISTANCE PLAN (ERAP)

Category A Infectious Substances, UN2814 and UN2900, that are identified in Subsection 7.1(7) of Part 7, Emergency Response Assistance Plan, require an emergency response assistance plan (Schedule 2, Special Provision 84).

An Emergency Response Assistance Plan (ERAP) is required for transportation of any quantity of the following Class 6.2, Infectious Substances, or any substance that exhibits characteristics similar to these substances [Section 7.1(7)]:

- (a)** Crimean-Congo Hemorrhagic fever virus;
- (b)** Ebola virus;
- (c)** Foot and mouth virus cultures;
- (d)** Guanarito virus;
- (e)** Hendra virus;
- (f)** Herpes B virus (Cercopithicene Herpesvirus-1) cultures;
- (g)** Junin virus;
- (h)** Kyasanur Forest virus;
- (i)** Lassa virus;
- (j)** Machupo virus;
- (k)** Marburg virus;
- (l)** Nipah virus;
- (m)** Omsk hemorrhagic fever virus;
- (n)** Russian Spring-Summer encephalitis virus;

- (o) Sabia virus; and
- (p) Variola (smallpox virus).

Part 7 of the TDG Regulations requires consignors and importers of the above infectious substances to register an ERAP. You can obtain an application to register an ERAP by calling CANUTEC at (613) 992-4624.

MISCELLANEOUS

Live Infected Animals

The transport of live infected animals is no longer prohibited. Shipments of live or dead infected animals must now comply with all the requirements of the TDG regulations in addition to requirements under the *Health of Animals Act*. This means that a shipping document will have to be prepared according to Part 3 of the TDG regulations instead of the special forms used by Agriculture Canada. This also means that the animals must be contained while in transport so that there can be no emission of infectious material from the compartment.

Information Contacts

For air shipments of infectious substances, contact:
Transport Canada - Air
Edmonton, Alberta
Telephone: (780) 495-3810

For ground shipments of infectious substances contact:
Alberta Transportation
Dangerous Goods and Rail
Alberta EDGE
Edmonton, Alberta
Telephone: 1-800-272-9600 (in the province of Alberta)
or (780) 422-9600 (Edmonton)

DEFINITIONS (SECTION 1.4)

- biological product** means a product 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.
- infectious substances** 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.
- 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.
- Category B** means an infectious substance that does not meet the criteria for inclusion in Category A.
- 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. *(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.)*
- 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.
- 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 Chapter 6.3 and Packing Instruction P650 of the UN Recommendations and the national regulations of the country of manufacture.

Dangerous Goods Shipping Document for Road Transport on Canadian shipments

CONSIGNOR			DESTINATION (City-Town)			
Name:			Name:			
Address:			Address:			
Name of Carrier		Prepaid <input type="checkbox"/>	Collect <input type="checkbox"/>	Transport Unit Number		
Point of Origin			Shipping Date		Shipper's No.	
REGULATED DANGEROUS GOODS						
UN Number	Shipping Name	Primary Class	Subsidiary Class	Packing Group	Quantity	Packages Requiring Labels
24-Hour Number: _____						
ERAP Reference _____ and Telephone Number _____						
Consignor's Certification						
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, are properly classified and packaged, have dangerous goods safety marks properly affixed or displayed on them, and are in all respects in proper condition for transport according to the Transportation of Dangerous Goods Regulations.						
Name of Consignor: _____						
Special Instructions						
NON-REGULATED GOODS						
Packages	Description of Articles			Weight		
Received in apparent good order				_____ Consignee's Signature		_____ Shipper's Signature
Received in Apparent Good Order	_____ Driver's Signature			_____ Driver's No.		

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