# Canada Gazette, Part I, Volume 157, Number 49: Regulations Amending the Transportation of Dangerous Goods Regulations (Canadian Update)

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December 9, 2023

**Statutory authority**

*Transportation of Dangerous Goods Act, 1992*

**Sponsoring department**

Department of Transport

# REGULATORY IMPACT ANALYSIS

# STATEMENT

(*This statement is not part of the Regulations*.)

## General Comment

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## Executive summary

**Issues:** The *Transportation of Dangerous Goods Regulations* (TDGR) under the authority of the *Transportation of Dangerous Goods Act, 1992* (TDG Act) need to be updated to strengthen existing rules, clarify provisions, fix inconsistencies, and introduce new rules in response to concerns raised by stakeholders, inspectors, and local authorities.

The current rules are not, for example, aligned with the United States (US) regulations (i.e. Title 49 of the *Code of Federal Regulations* [49 CFR]) pertaining to buffer car [1] requirements for the transportation of dangerous goods by rail. The US regulations require a minimum of one buffer car between a railway vehicle carrying dangerous goods and an occupied railway vehicle for both unit trains (trains containing the same type of dangerous goods) and mixed commodity freight trains (trains containing both dangerous goods and non-dangerous goods rail cars). In Canada, unit trains are not required to add a buffer car, whereas the addition of at least one buffer car is required on mixed freight trains unless rail companies believe that the addition of buffer cars would have a negative impact on train dynamics (i.e. train movement along the tracks). This misalignment between the US and Canadian regulations means that train shipments which remain in Canada pose a higher-level safety risk for their crew than those that originate or are destined to the US.

The TDGR do not require an emergency response assistance plan (ERAP) for the transport of up to 10 000 litres (L) of anhydrous ammonia (a toxic and corrosive

gas used as fertilizer for its high content in nitrogen) in a tank for agricultural purposes. Current farming practices, however, often involve the use of multi-tank system configurations (i.e. up to four tanks loaded with anhydrous ammonia on a single trailer) which can contain more than 10 000 L of anhydrous ammonia. This practice endangers public safety and could potentially lead to an accidental release for which there is no ERAP in place.

The TDGR are not aligned with the latest changes adopted under the *Packaging and Transport of Nuclear Substances Regulations, 2015* (PTNSR, 2015), for the transport of radioactive substances used for medical treatment or diagnosis and for unclassified radioactive waste materials. [2] The lack of harmonization between the TDGR and the PTNSR, 2015 imposes a burden on impacted stakeholders as they have to be familiar with two different sets of federal rules.

Some provisions in the TDGR are not aligned with the latest *United Nations Model Regulations on the Transport of Dangerous Goods* (UN Recommendations) 22nd edition. The lack of harmonization between the TDGR and UN Recommendations creates confusion for Canadian stakeholders as they must contend with multiple sets of requirements for both domestic and international transportation of dangerous goods. Several amendments designed to bring the TDGR into alignment with the UN Recommendations were developed and pre-published in the *Canada Gazette*, Part I, on November 26, 2022, as the *Regulations Amending Certain Regulations Made Under the Transportation of Dangerous Goods Act, 1992 (Part 12 and International Harmonization Update)*. However, not all amendments needed to support harmonization were included in the Part 12 and International Harmonization Update. Given the high volume of amendments needed to support harmonization, and the highly technical nature of the amendments, Transport Canada (TC) determined that, for practical purposes, the amendments should be developed and introduced in two separate proposals. As such, some amendments needed to support harmonization with the UN Recommendations have been included in this regulatory proposal.

Occasionally, TC issues an equivalency certificate (EC) to allow activities that are not permitted under the TDGR but are conducted at a level of safety equivalent to complying with the TDG Act. For customary practices, this requirement imposes an unnecessary burden on both TC and stakeholders due to the recurrent applications for, and issuances of, ECs which are only valid for up to five years. TC is proposing to codify some recurrent activities authorized under ECs into the TDGR.

**Description:** The proposed *Regulations Amending the Transportation of Dangerous Goods Regulations* (Canadian Update) [proposed Regulations] would bring several modifications and updates to existing requirements to achieve better clarity, consistency, and uniform interpretation. The proposed Regulations would also introduce new rules governing activities currently allowed through the issuances of ECs. The proposed Regulations would update existing requirements for rail transportation to better align the Canadian buffer car rules with the US regulations. The proposed Regulations would also amend the TDGR for the transportation of anhydrous ammonia on public roads for agricultural purposes to address ongoing safety concerns. In addition, the proposed Regulations would harmonize the TDGR with the PTNSR, 2015, regarding the transportation of unclassified radioactive waste materials back to the consignors [3] for characterization.

**Rationale:** The proposed Regulations would bring several modifications and updates to existing requirements to address ongoing safety concerns, strengthen existing rules, clarify provisions, and address and correct inconsistencies. Some of the proposed changes would impose compliance costs to the industry. Specifically, buffer car requirements on unit trains transporting dangerous goods would generate a compliance cost to railway companies and an operational cost to dangerous goods shippers. The limitation of the use of the agricultural anhydrous ammonia exemption from documentation and ERAP would also impact some farmers who use nurse tanks.

The proposed Regulations would result in a net monetized cost of about $6.25 million between 2024 and 2033 (discounted to the year 2024 at a 7% discount rate and expressed in 2021 dollars). Railway companies would incur a total cost of $6.35 million associated with the buffer car requirement and the Government of Canada (the Government) would incur $0.01 million for the inspections with farm owners of nurse tanks. The incorporation of new provisions in the TDGR would remove the need to apply for ECs and would result in a total cost savings of $0.11 million to stakeholders and the Government during the same period. Despite the net monetized cost, TC expects that the total benefits, including qualitative safety benefits, would outweigh the monetized costs.

The one-for-one rule applies since there would be incremental changes in administrative burden on business, and the proposed Regulations are therefore considered burden “out” under the rule. The proposed Regulations would result in an annualized reduction of administrative burden of $347 on affected businesses (discounted to the year 2012 at a 7% discount rate expressed in 2012 Canadian dollars). The proposed Regulations would affect 20 small businesses that are dangerous goods consignors and carriers, which would incur a total cost saving of $6,073 between 2024 and 2033.

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## Issues

### *Buffer car requirements*

The TDGR provide an exemption that allows mixed commodity freight trains to not include a buffer car if it is likely to negatively impact train dynamics. The exemption is intended to allow for better train configuration and limit the number of added railway vehicles [4] that would increase train length and could adversely affect train dynamics. [5] However, since there are no criteria under the existing TDGR to specify

situations that would have a negative impact on train dynamics, this has resulted in inconsistent interpretations of the exemption, which creates a safety concern. In addition, the TDGR are not aligned with the US regulations regarding buffer car requirements on unit trains. Due to this misalignment, the lesser requirement (i.e. no buffer cars) is often followed by Canadian railway companies for domestic shipments while buffer cars are employed for trans-border shipments. As a result, unit trains that originate and remain in Canada do not have buffer cars, while unit trains destined to or originating from the US have buffer cars often placed on both ends of the train for the entire Canada / US trip. The reason for requiring buffer cars at both ends of the train is that unit trains are generally configured with occupied locomotives at both the front and rear ends of the train. Thus, unit train shipments which remain in Canada pose a higher-level safety risk for their crew than those that originate or are destined to the US. [6]

### *Agricultural anhydrous ammonia exemption*

Anhydrous ammonia is a toxic and corrosive gas widely used as a nitrogen fertilizer to support plant growth and to replenish nutrients in the soil. Currently, the TDGR exempt the transport of agricultural anhydrous ammonia used for field application from documentation and an ERAP if it is transported on land, and in a large Means of

Containment (MOC) [i.e. a nurse tank [7] with a capacity of up to 10 000 L], and the distance travelled on public roads is less than or equal to 100 km. Since anhydrous ammonia is relatively easy to apply and is readily available, the demand for agricultural anhydrous ammonia is increasing, and the 100 km limit is difficult to enforce given it is a long distance on public roads. [8] To cover the needs of farms, multi-tank system configurations (i.e. up to four tanks loaded on a single trailer allowing the transport of more than 10 000 L of anhydrous ammonia without ERAP coverage) are being used on Canadian public roads. The use of a multi-tank system configuration adds a lot of stress and strain (which causes deformation of the materials) onto both the trailer and the tanks. The current practice of utilizing multi-tank system configurations increases the probability of connection failures between

the trailer and the tanks, which could lead to serious incidents. As a result, a potential release of anhydrous ammonia could occur for which there is no ERAP in place to mitigate the risk. Between 2002 and 2016, TC recorded 249 incidents involving anhydrous ammonia transported in nurse tanks, with a few reports of injuries due to chemical exposure, and in some cases, evacuation of residents nearby as a preventive measure.

### *Packaging and Transport of Nuclear Substances Regulations, 2015*

The TDGR are not aligned with the latest changes adopted under the PTNSR, 2015, for the transport of unclassified radioactive waste materials and radioactive substances used for medical treatment or diagnosis.

When unclassified radioactive waste materials are identified in loads of waste at a dump site, they need to be shipped back to the consignor for further analysis and testing using more sophisticated equipment. Typically, these substances are detected at a dump site by a portable radiation detector, which is not adequate to perform the required analysis and testing of the loads. It is possible that the portable detector at the dump site is overly sensitive and is incorrectly identifying the waste as a Class 7 Radioactive Material, [9] but this cannot be confirmed until proper analysis and testing have been completed.

In such a situation, the PTNSR, 2015 allow for the one-time transport of the unclassified waste materials to a safer location for proper characterization as long as specific conditions are met (i.e. the level of radiation detected is sufficiently low and there is no possibility for dispersal of the nuclear substances). The use of the one-time transport exemption also triggers additional notification and reporting to the Canadian Nuclear Safety Commission (CNSC), so it can monitor the situation and confirm the characterization has been completed and the radioactive substance has been disposed of safely.

However, unlike the PTNSR, 2015, the TDGR do not allow for the one-time transport of unclassified radioactive wastes from a dump site to conduct further analysis and testing. Under the TDGR, the transport of unclassified waste would be subject to

specific documentation, training and marking requirements. When there is a discrepancy between different requirements pertaining to the transportation of dangerous goods, the expectation is that the stricter requirements prevail and, therefore, must be met. This means that, if unclassified radioactive waste is detected at a dump site, the driver of the vehicle carrying the waste would be expected to follow the requirements of the TDGR, in which case, the vehicle would need to remain at the dump site until the radioactive materials can be properly characterized. [10] Leaving the vehicle in place could create safety risk, depending on the quantity / type of radiation detected and the time needed to conduct a proper analysis. Furthermore, industry stakeholders have raised concerns about the cost implications of leaving the vehicle in place for a prolonged period.

It is important to note that the latest requirements under the PTNSR, 2015 for the transport of unclassified wastes were developed under the guidance of CNSC, which is the Canadian leading authority governing the safe and secure transportation, including the classification scheme and packaging requirements, of radioactive substances nationally and internationally. As such, it is TC's position that the PTNSR, 2015, and not the TDGR, should be followed when unclassified radioactive waste is detected at a dump site.

Similarly, radioactive materials contained in human or animal tissue (or a sample from human or animal tissue) transported for the purpose of medical treatment, diagnostic medical assessment, or research are not currently exempted from documentation, training, and marking requirements under the TDGR, whereas such substances are exempted from documentation, markings, training requirements under the PTNSR, 2015. As Canadian consignors must follow the more stringent set of rules when faced with differing requirements that apply to a given situation, they must follow the rules set out in the TDGR, which require documentation, training, safety marks, etc.

For better harmonization and to improve the federal statutory corpus governing the transportation of dangerous goods, the TDGR need to be updated to include the latest changes adopted in the PTNSR, 2015 for the transport of unclassified

radioactive waste materials and radioactive substances used for medical treatment or diagnosis. The discrepancy between the TDGR and the PTNSR, 2015, creates a burden to Canadian consignors as they have to contend with two sets of rules and cannot benefit from current exemptions (assessed to be safe and in the public interest) in the PTNSR 2015 when applicable.

### *International harmonization*

Certain provisions in the TDGR do not align with international codes and this misalignment can create confusion among stakeholders and negatively impact international trade, as follows below.

- While the UN Recommendations include a special provision to specify requirements for refrigerating machines containing non-flammable, non-toxic compressed or liquefied gases or ammonia, the TDGR do not. This misalignment prevents Canadian consignors from benefiting from the extra clarity related to the refrigerating machines exemption namely the type and quantity limits of dangerous goods already contained in such machines.
- Currently, there is misalignment between the UN Recommendations and the TDGR regarding the shipping name of alkali metals (i.e. lithium, sodium, potassium, rubidium, and cesium) and alkaline earth metals (i.e. magnesium, calcium, strontium, and barium). This misalignment with international models creates unnecessary burden to Canadian consignors as they have to contend with two sets of rules pertaining to shipping names on shipping documents during international trade.
- The UN Recommendations have a special provision that specifies the requirements regarding the classification scheme for certain pesticides based on their $LC_{50}$ [11] and $LD_{50}$ [12] values (a total of 26 UN numbers). Currently, the TDGR do not include a similar provision to inform consignors how to adequately classify these dangerous goods. Standardized international classification requirements for pesticides would help safeguard that hazards are clearly and consistently communicated to first responders and others involved

in the transport of these dangerous goods. If these internationally recognized classification requirements are not properly followed, the hazards posed by pesticides may not be adequately communicated to first responders and others involved in the transport of these dangerous goods.

- The UN Recommendations exempt household light bulbs from documentation, training, and safety mark requirements if the light bulbs do not contain radioactive materials and do not contain mercury in quantities higher than 1 kg of mercury for sea and land transport, and 15 g for air transport. However, the TDGR do not provide a similar exemption for the transport of these light bulbs and do not specify that these bulbs are included in the exemption for mercury contained in manufactured articles. This misalignment prevents Canadian consignors from benefiting from the exemption.
- The UN Recommendations set out marking requirements for unpackaged articles [13] other than Class 1, Explosives [14] if the articles are transported empty, uncleaned, and unpackaged. The UN Recommendations also specify the conditions that need to be met for the competent authority to approve the transport of the unpackaged articles. However, the TDGR do not include the term “unpackaged article” nor specify the marking requirements for these articles. This misalignment can create confusion for stakeholders and could lead to safety issues as without the required markings, the hazards posed by these articles would not be immediately communicated to first responders and others involved in the trade chain.
- The UN Recommendations specify the shipping names or technical names assigned to all medical wastes or clinical wastes that are permitted for transport under the identification UN Number “UN3291” and the shipping name “(BIO) MEDICAL WASTE, N.O.S.” Currently, the TDGR do not have a similar provision to guide stakeholders in the classification of these types of dangerous goods. As a result, impacted stakeholders are following outdated provisions for national trade and they must contend with two sets of rules for international trade.

### *Outdated provisions*

Stakeholders have expressed concerns about outdated provisions of the TDGR, as follows below.

- When dangerous goods, other than Class 1, Explosives or Class 7, Radioactive Materials, are in transport between two properties within 3 km or less on public roads, the TDGR do not apply if the road vehicle displays a placard (i.e. sign for public display) for the primary class of each of the dangerous goods or a danger placard. However, the TDGR fail to specify that the danger placard can only be displayed if three conditions are met, namely that the total mass of dangerous goods included in the same class is less than 1 000 kg, the dangerous goods do not require an ERAP, and the goods are included in different classes and contained in two or more small MOC. This lack of specificity results in confusion about how the danger placard is to be used and could lead to safety issues if the correct hazards associated with the type/ quantity of dangerous goods in transport are not communicated consistently. In addition, the requirement to inform local police, in writing, of the nature of the dangerous goods in advance of their transport has been determined to be an unnecessary burden by local enforcement officers since the transport of these goods must already comply with applicable placard requirements.
- Currently, the TDGR do not prohibit the display of safety marks (i.e. labels, placards, or UN number) if dangerous goods are present in an MOC in a quantity less than the marking thresholds as long as these marks are not misleading as to the presence or nature of the dangerous goods. The TDGR outline the conditions for when a MOC must display safety marks. However, the TDGR do not permit the voluntary display of UN numbers on a road vehicle or a railway vehicle. Since the voluntary display of the proper UN numbers during the transport of dangerous goods in or on these vehicles is not misleading as to the presence and nature of dangerous goods, this provision would benefit from an update to better align the marking rules, namely the display of UN numbers for both MOC and means of transport.

- Sometimes, after an MOC has been emptied, a small amount of dangerous goods residue may still be present. The TDGR provide that an empty MOC can be shipped if it is accompanied with a shipping document stating "Residue-Last Contained." However, the current provision does not specify that all indications related to the quantity of dangerous goods must be crossed out on the shipping document. This omission results in a misleading message as to the presence and the quantity of dangerous goods remaining in the empty container.
- When a large MOC or Intermediate Bulk Container (IBC) [15] is placed inside a means of transport like a van trailer, the safety marks may no longer be visible from outside the vehicle. The TDGR currently specify that the required safety marks on the MOC must be visible from outside the vehicle, or these marks must be displayed on the outside of the vehicle to secure their visibility for emergency response purposes. The current requirement, however, is open to misinterpretation because it does not differentiate between an outer large means of containment and a means of transport (i.e. road vehicle or rail vehicle).
- Part 16 (Inspectors) of the TDGR contains erroneous references to sections of the TDG Act as well as certain outdated forms and tables. These forms and tables are now set out in an internal policy that is already in use by TC inspectors.
- The TDGR allow the transport of a "gross mass" of up to 150 kg of oxygen cylinders only if the valves are in the closed position. The TDGR do not allow the use of compressed oxygen cylinders with open valves for medical purposes during transport on board a road vehicle, a railway vehicle, or a vessel on a domestic voyage. In addition, a company that requires an open oxygen valve for the purpose of aeration and oxygenation of fish tanks or aquatic organisms during transport needs to apply for an EC. In response to stakeholder applications, TC has authorized these activities under 24 ECs since 2008. Recurrent applications for ECs impose an administrative cost on both industry

and TC. The TDGR need to be updated so that recurrent applications for ECs in such circumstances would no longer be needed.

- Currently, enforcement officers such as police, wildlife and peace officers need to obtain ECs under the TDGR to transport dangerous goods required to carry out their duties (e.g. firearms) on a road vehicle, a rail vehicle, or a vessel on a domestic voyage. TC has issued 17 ECs to provide enforcement officers exemptions to transport the dangerous goods they need to carry out their duties. The first EC was issued in 2001. The TDGR need to be updated to clarify that dangerous goods required for enforcement officers to perform their duties are outside the general scope of the TDGR and do not require an EC.
- The current TDGR do not permit the transport of empty drums or IBCs containing residue of dangerous goods to a facility for the purpose of remanufacturing, repairing, or conducting leak tests. In response to stakeholders' requests, TC has issued two ECs since 2016 to authorize this activity when certain conditions are met [i.e. drums or IBCs need to be accompanied by a document that includes the class or division of each residue followed by the words "Residue Drums" or "Residue IBC(s)" and the number of drums or IBCs containing the residue of dangerous goods]. However, in the interest of reducing the burden on both industry and TC, the TDGR need to be updated so that recurrent applications for ECs in such circumstances would no longer be needed.

### *Administrative issues*

Certain provisions in the TDGR which are administrative in nature are creating confusion among stakeholders and need to be clarified, as follows below.

- The current exemption in the TDGR sets the capacity limit for alcoholic beverages included in packing group III (i.e. substances presenting low danger) to 250 L or less per MOC. This limit has created confusion among consignors as to whether the capacity limit per MOC should be 250 L or 450 L because the current limit in the other exemption for flammable liquids included in packing

group III is less than or equal to 450 L (i.e. equal to a small MOC limit).

- For dangerous goods in excepted quantities, the English version of subsection 1.17.1(7) found in Part 1 of the TDGR provides the option of having a shipping document as long as it includes the words “dangerous goods in excepted quantities” and the number of outer MOC. Whereas the French version of the same subsection does not specify that a shipping document is optional to accompany these goods. The French version of this subsection needs to be adjusted to reflect the correct information provided in the English version.
- There is a discrepancy in the use of the term “Exemption” in the titles of Part 1 sections. Some sections include the term “Exemption” in their titles. Since Part 1 of the TDGR relates to special cases and exemptions from specific requirements for domestic transport, the term “Exemption” is not necessary in the sections’ titles, and would be removed from the sections’ titles, with all necessary grammatical modifications, with the exception of sections 1.38 and 1.47 to 1.50 as they will be modified in a subsequent amendment.
- The fire extinguishers exemption found in Part 1 of the TDGR relates only to one UN number (UN1044, FIRE EXTINGUISHERS with compressed or liquefied gas). To simplify Part 1 of the TDGR, this exemption would be moved to Schedule 2 as a new special provision. This would be an editorial change to simplify Part 1 of the TDGR.
- The TDGR set the quantity limit for the black powder (gunpowder) exemption to 150 kg. This quantity limit is erroneous and is not consistent with the maximum quantity permitted under the *Explosives Regulations, 2013*, for transport on a road vehicle, a railway vehicle, or a vessel on a domestic voyage, which is 75 kg of propellant powder.
- The TDGR allow the transport of aerosol containers and gas cartridges if they are in a MOC that is in compliance with the requirements for transporting gases in Part 5. However, special provision 80 of Schedule 2 does not specify that

these dangerous goods must be packed in accordance with the applicable packing instruction set out in the Canadian General Standards Board (CGSB) safety standard 43.123. [16] A reference to this standard is required to outline expectations and requirements.

### *Technical standards for means of containment*

Currently, the TDGR incorporate by reference [17] an outdated standard for rail cars and ton containers that does not reflect current industry practices. TC safety standard, TP14877 (formerly CAN/CGSB-43.147), [18] a statically referenced standard [19] in the TDGR, sets out requirements for the design, manufacture, and use of means of containments for the transportation of dangerous goods by rail, rail tank cars, and ton containers. In 2019, TC proposed to return to the use of CGSB standards and split the TP14877 standard into two separate standards, i.e. CAN/CGSB-43.147 for rail cars and CAN/CGSB-43.149 for ton containers published in March 2023 and in April 2023 respectively. This proposition was made because the TP14877 standard could not be included as dynamic referencing [20] in the TDGR. The incorporation by reference of the new CGSB standards, as amended from time to time, to replace TP14877, when applicable, is needed to help TC stay up to date with industry developments and to respond to stakeholders' needs without creating an undue burden on affected stakeholders. TC communicates updates and modifications made to CGSB standards to TDG stakeholders through notifications posted on TC's website and through email correspondence. Currently, stakeholders have to comply with standard TP14877 which was developed for both tank cars and ton containers. Moving forward, having the two CGSB standards will allow stakeholders to focus on the requirements of the standard relevant to their specific needs. For instance, stakeholders engaging in activities that require the use of ton containers (a larger portion of ton containers are transported by road than rail) will only need to refer to the CAN/CGSB-43.149 standard for ton containers without the need to go through the tank car requirements, because those requirements will be listed in the CAN/CGSB-43.147 standard.

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## Background

### *Transportation of Dangerous Good Regulations*

In Canada, the TDGR set out requirements (i.e. classification, packaging, markings, etc.) for the safe transportation of dangerous goods by all modes of transport (rail, road, water, and air). These dangerous goods include a wide variety of substances such as, but not limited to, household products, heating fuels, fertilizers, and life-support chemicals like oxygen and medical isotopes.

The TDGR are comprised of 16 parts and three schedules. Each part outlines requirements for a different aspect of the safety regime. For this regulatory proposal, provisions in Parts 1, 3, 4, 10, and 16 of the TDGR would be amended along with some technical changes to the schedules. Part 1 specifies how to interpret the regulations and includes definitions as well as general and special provisions (e.g. exemptions from specific regulatory requirements for domestic transport). Parts 3 and 4 set out requirements for documentation and dangerous goods safety marks respectively. Part 10 specifies the requirements for national and international transport of dangerous goods by rail and Part 16 contains forms and table templates as well as other requirements for use by TDG inspectors. Schedule 1 of the TDGR lists the dangerous goods by UN Number and provides information about the classifications, special provisions, and the permitted quantities for transport of these dangerous goods. Schedule 2 contains the special provisions that provide details on exemptions, composition limits, and any additional requirements. Schedule 3 lists the shipping names of substances in alphabetical order followed by the UN Number. Substances that are forbidden for transport are also included in Schedule 3.

### *Regulatory Review*

Budgets 2018 and 2019 provided funding for the Government to pursue a regulatory reform agenda to improve the agility, transparency, and responsiveness

of the Canadian regulatory system. This included targeted Regulatory Reviews, which examine regulations and regulatory practices, and identify novel regulatory approaches, to support economic growth and innovation in Canada. In 2019, TC published the Transportation Sector Regulatory Roadmap as part of the first round of the Treasury Board Secretariat's (TBS) targeted Regulatory Reviews.

A central feature of the Regulatory Reviews, which are coordinated by TBS in partnership with federal departments and agencies, is stakeholder engagement. The Regulatory Review consultation process yielded an array of comments from industry concerned mainly with the misalignment between the TDGR and international regulations, namely, the UN Recommendations and US regulations. Stakeholders pointed out that maintaining requirements consistent with international codes would reduce confusion and the administrative burden as the regulated entities must comply with different sets of rules for domestic and international transportation. Attention was also drawn to the importance of keeping pace with industry practices, allowing more flexibility, and developing requirements that meet the needs of the regulated community. Stakeholders also noted the need for greater clarity and consistency in the application of regulations. [21]

### *Minister of Transport's mandate letter*

Canada's rail transportation system remains a top priority for the Government. In the mandate letter for the Minister of Transport published on December 16, 2021, the Minister of Transport was tasked with advancing "measures that further improve the safety and security of Canada's rail system."

The proposed Regulations would update existing requirements for rail transportation to further improve the safety of Canada's rail system, helping crew members and goods reach their destinations safely.

### *Alignment with international codes*

To promote consistency among regulatory frameworks around the world, the UN develops guidelines and recommendations for the safe transportation of dangerous

goods by all modes of transportation (e.g. air, surface, and marine). The UN Recommendations are regularly amended to reflect the most recent scientific evidence and advancements in safe business practices related to the transportation of dangerous goods worldwide. These amendments, which are informed by experts from member countries, including Canada, are often related to the hazard classification criteria, hazard communication tools, and transport conditions (such as documentation, marking, and packaging) of dangerous goods across all modes of transport. Since Canada is a member of UN agencies and is involved in the development of the UN Recommendations, it is expected that Canada will incorporate into its laws the principles laid down in the UN Recommendations and other international codes to increase worldwide harmonization in the transport of dangerous goods. As such, the TDGR need to be updated periodically to harmonize, to the greatest extent possible, with the UN Recommendations and the international codes. This internationally harmonized framework helps carriers, consignors, and enforcement authorities by facilitating compliance and trade between countries and by enhancing the safety of the transportation of dangerous goods both domestically and internationally.

The TDGR are being updated through the Part 12 and International Harmonization Update proposal, which was pre-published in the *Canada Gazette*, Part I, on November 26, 2022, with the intent to stay aligned with international models. Given the size of the Part 12 and International Harmonization Update proposal and the number of amendments it includes, TC decided that some of the amendments needed to support international harmonization would best be addressed in this regulatory proposal. It should also be noted that each of the two regulatory proposals also deals with other issues affecting the TDGR.

### *Buffer cars requirement*

Among other things, the TDGR prescribe the requirements for the location of placarded railway vehicles transporting dangerous goods within a train to secure the safety of the crew. The TDGR require the addition of at least one buffer car on mixed freight trains carrying multiple commodities including dangerous and non-

dangerous goods. Buffer cars are used to separate dangerous goods from personnel, the engine, and/or the caboose, which reduces risk to the train crew by giving them more time to safely exit the locomotive in the event of an incident. Buffer cars are also used to separate goods that would be dangerous to place together.

The TDGR do not, however, require unit trains carrying loaded tank cars all containing the same commodity of dangerous goods to add buffer cars. Whereas, in the US, the 49 CFR require both mixed freight trains and unit trains to have at least one buffer between a dangerous goods car and an occupied railway vehicle.

### *Agricultural anhydrous ammonia exemption*

Under the current TDGR, the transportation of anhydrous ammonia in nurse tanks is exempted from a shipping document and an ERAP if the dangerous goods are being transported 100 km or less, and in a tank that can hold 10 000 L or less. These rules were created over 30 years ago, when farmers had a simple way to move this type of dangerous good from a supplier to their farm fields on rural roads isolated from residential areas.

Over the past 30 years, [22] agricultural transformation and modernization have led to larger farming operations and thus the 100 km limit is no longer relevant. In some instances, a multi-tank system configuration (i.e. up to four tanks loaded on a single trailer allowing more than 10 000 L of anhydrous ammonia to be transported without emergency response plan coverage) is being used on Canadian public roads. This practice creates a public safety concern as this multi-tank system could potentially lead to an accidental release and, in some situations, there is no ERAP in place to respond to this type of incident.

### *Packaging and Transport of Nuclear Substances Regulations, 2015*

The TDGR aim to stay harmonized with other federal titles governing the transportation of dangerous goods. For example, the PTNSR, 2015, set out requirements for the packaging and transport of dangerous goods included in Class

7, Radioactive Materials. Amendments to the TDGR are needed to further align the TDGR with the latest requirements permitted under the PTNSR, 2015, for the transport of radioactive substances used for medical treatment or diagnosis and for unclassified radioactive waste materials.

### *Outdated provisions*

The TDGR are also updated on a regular basis to strengthen existing rules, enhance clarity and readability of certain provisions, and introduce new rules, when applicable, in response to the concerns of stakeholders, inspectors, and local authorities.

### *Technical standards for means of containment*

The TDGR statically reference TC safety standard, TP14877, which sets out requirements for the design, manufacture, and use of means of containment for the transportation of dangerous goods by rail, rail tank cars, and ton containers. The TP14877 standard cannot be incorporated in the TDGR as a dynamic reference, which means that when a change is made to the standard, those amendments do not automatically form part of the TDGR. To stay up to date with industry developments, and to reduce the burden on TDG stakeholders, TC is simplifying the process of requirements verification. Currently, stakeholders need to consult TP14877, which sets out requirements for ton containers and tank cars, and they have to select the requirements that apply to their activities. TC would replace the current TP14877 standard referenced in the TDGR with two updated standards (i.e. CAN/CGSB-43.147 for rail cars and CAN/CGSB-43.149 for ton containers). The Canadian standards CGSB-43.147 and CAN/CGSB-43.149, which set out requirements for the design, manufacture, and qualification of tank cars and ton containers, respectively, would be incorporated by reference, as amended from time to time, in the TDGR to replace the 2nd edition of the TP14877. By splitting the TP14877 into two CGSB standards, stakeholders would only need to consult the standard that relates to their specific activities.

▸ **View comments for the Background section** 1 comment(s)

## Objective

The objectives of the proposed Regulations are to

- enhance crew safety during the transportation of dangerous goods by rail and promote efficient cross-border transportation of dangerous goods for Canada-U.S. trade by providing consignors and carriers with more uniform rules for buffer cars requirements;
- address ongoing safety concerns and reduce risks related to the transport of anhydrous ammonia on public roads for agricultural purposes;
- improve alignment with international dangerous goods requirements and standards to support the ongoing safe and efficient transport of dangerous goods throughout Canada and internationally;
- improve the clarity of existing requirements to help promote compliance; and
- incorporate by reference the new CGSB standards (CAN/CGSB-43.147 for rail cars and CAN/CGSB-43.149 for ton containers), as amended from time to time, to replace the TP14877.

▸ **View comments for the Objective section** 2 comment(s)

## Description

### *Buffer car requirements*

The proposed Regulations would update the buffer car rules for the transportation for dangerous goods by rail as follows:

- remove provisions specifying that unit trains are *not* required to have buffer cars;
- require at least one buffer car (i.e. empty or loaded railcar with non-dangerous goods) to be placed between an occupied locomotive for all trains (including

unit trains) and rail vehicle carrying dangerous goods. This requirement will create a separation distance between a dangerous goods car and an occupied railway vehicle to give crew members more time to exit the train safely in case of a derailment;

- update the provisions related to train dynamics and confirm that these provisions do not override the requirements for the use of buffer cars; and
- prohibit the placement of MOC carrying dangerous goods such as, but not limited to, intermodal containers, freight containers or portable tanks, that are attached to flatbed rail cars or any other type of railway vehicle, next to an occupied railway vehicle or to a railway vehicle that has a continual source of ignition.

### *Agricultural anhydrous ammonia exemption*

The proposed Regulations would update the scope of the anhydrous ammonia exemption as follows:

- limit the agricultural anhydrous ammonia exemption from documentation requirements and ERAP to only field application practices (e.g. during the application of anhydrous ammonia into the soil);
- remove the quantity limit of 10 000 L of anhydrous ammonia from the existing exemption and clarify that only the use of either a single nurse tank or a twin nurse tank configuration would be permitted;
- remove the conditions for the distance limit of 100 km and require all agricultural anhydrous ammonia in transport in a quantity above 3 000 L (i.e. the ERAP index for anhydrous ammonia) to be covered by an ERAP for any distance travelled on public roads that is more than 3 km; and
- maintain the exemption from Part 3 of the TDGR for the transportation of agricultural anhydrous ammonia on public roads for any distance that is more than 3 km if nurse tanks are marked with the ERAP phone number.

### *Packaging and Transport of Nuclear Substances Regulations, 2015*

The proposed Regulations would update the TDGR to align with the PTNSR, 2015 as follows:

- modify section 1.43, Class 7, Radioactive Materials, Exemption, to align with PTNSR, 2015 pertaining to the documentation required for the transport of radioactive substances packed in limited quantities; and
- introduce two new sections to exempt radioactive materials used for medical purposes and unclassified radioactive waste materials already allowed for transport under the PTNSR, 2015.

### *International harmonization*

The proposed Regulations would update and introduce special provisions to specific UN Numbers in the TDGR to harmonize with the UN Recommendations as follows:

- define the UN number assigned to refrigerating machines containing non-flammable, non-toxic compressed or liquefied gases or ammonia based on the quantity of the dangerous goods contained in these machines as well as the transportation requirements for these machines;
- align the shipping names of alkali metals (i.e. lithium, sodium, potassium, rubidium, and cesium) with UN Recommendations;
- align the shipping names of alkaline earth metals (i.e. magnesium, calcium, strontium, and barium) with UN Recommendations;
- specify the appropriate classification that should be assigned for certain pesticides (a total of 26 UN Numbers);
- amend the TDGR to exempt the transport of household light bulbs that do not contain radioactive materials or mercury from requirements related to markings, training, and documentation if certain conditions are met such as light bulbs are collected directly from individuals; transported to a collection or recycling facility; contain no more than 1 g of dangerous goods; and are

individually packaged to guarantee projectile effects of any rupture will be contained in the package;

- specify that unpackaged articles containing dangerous goods, other than Class 1, Explosives, are permitted for transport if they meet the required conditions, i.e. in a MOC marked in accordance with Part 4, which covers dangerous goods safety marks;
- update existing special provisions in Schedule 2 to reflect recent changes to the UN Recommendations or to provide further clarification, like amending the provision related to solid desensitized explosives by adding two new UN Numbers; and
- update the shipping name of UN3291, (BIO) MEDICAL WASTE, N.O.S in paragraph 1.42.3(a) to include the following description: UN3291, CLINICAL WASTE, UNSPECIFIED, N.O.S.; or UN3291, REGULATED MEDICAL WASTE, N.O.S.

### *Outdated provisions*

The proposed Regulations would update and clarify some provisions in the TDGR in response to feedback received from regulated entities, inspectors, and local authorities as follows:

- update the placarding requirements (i.e. placards must be displayed on the road vehicles in accordance with Part 4 of the TDGR, which covers dangerous goods safety marks) when transporting dangerous goods between two properties within 3 km or less on public roads and remove the requirement to inform local police of the movement of these dangerous goods;
- allow the voluntary display of UN numbers on a road vehicle or railway vehicle along with the required placards if these marks are not misleading to the presence or nature of the dangerous goods;
- specify when and how to use the terms “Residue” or “Residue-Last Contained” on the shipping document;
- update the conditions related to the visibility of dangerous goods safety marks

(e.g. labels, placards, and UN Numbers) on a MOC (such as IBCs) once loaded into a road vehicle;

- specify that at least one safety mark on each means of containment (i.e. label or placard) should be visible from the outside of the road vehicle during transport of diesel fuel or gasoline in a total quantity less than or equal to 2 000 L;
- repeal outdated form templates and tables historically used by inspectors in Part 16 and correct erroneous and/or outdated references to sections of the TDG Act;
- allow for the transport of compressed oxygen cylinders with open valves on board a road vehicle, a railway vehicle, or a vessel on a domestic voyage for medical purposes for an individual or animal or for oxygenation or aeration purposes for aquatic live organisms;
- allow for the transport of dangerous goods used by enforcement officers to carry out their duties; and
- allow for the transport of IBCs containing residue of dangerous goods on board a road vehicle, a railway vehicle, or a vessel on a domestic voyage for the purpose of testing or inspection.

### *Administrative changes*

The proposed Regulations would update and amend the following provisions to simplify the TDGR or to provide clarification:

- increase the MOC capacity limit of the alcoholic beverage included in packing group III from 250 L to 450 L to be consistent with the capacity limit set out in the other exemption for flammable liquids included in packing group III, which is not more than 450 L;
- amend the French version of subsection 1.17.1 (7) found in Part 1 of the TDGR to specify that the requirements under this subsection only apply if a shipping document accompanies the transport of dangerous goods in excepted quantities;

- move the fire extinguisher exemption from Part 1 of the TDGR to Schedule 2 as a new special provision since it relates only to one UN number which is UN1044, FIRE EXTINGUISHERS with compressed or liquefied gas;
- update provisions related to black powder (gunpowder) to lower the exempted quantity from 150 kg to 75 kg;
- remove the word "Exemption," with all necessary grammatical modifications, from the titles of the Part 1 sections of the TDGR to simplify Part 1 and use parallel construction in the section's titles of Part 1, with the exception of sections 1.38 and 1.47 to 1.50 as they will be modified in a subsequent amendment; and
- update provisions related to the packing instructions of aerosol containers and gas cartridges by introducing a reference to the applicable packing instruction set out in the safety standard CAN/CGSB-43.123.

### *Changes to technical standards for the means of containment*

#### CAN/CGSB-43.147

The proposed Regulations would incorporate by reference National Standard of Canada CAN/CGSB-43.147, "Design, manufacture, maintenance, qualification, inspection and marking of tank cars and the selection and use of large means of containment or transport units used in the handling, offering for transport or transporting of dangerous goods by rail of classes 2, 3, 4, 5, 8, 9 and division 6.1," as amended from time to time. The standard would replace the TC Standard, TP14877, 2nd edition, "Containers for Transport of Dangerous Goods by Rail." The CAN/CGSB-43.147 builds on the previous TP14877 and includes the following changes:

- updates the safety requirements for tank cars used for toxic-by-inhalation dangerous goods, such as anhydrous ammonia;
- updates the safety requirements for tank cars used for flammable cryogenic dangerous goods, such as liquefied hydrogen and liquefied natural gas; and
- removes the requirements pertaining to ton containers as these are addressed

in safety standard CAN/CGSB-43.149.

**CAN/CGSB-43.149**

A second technical standard would also be incorporated by reference in the TDGR, the National Standard of Canada CAN/CGSB-43.149, "Design, manufacture, maintenance, qualification, selection and use of ton containers used in the handling, offering for transport or transport of dangerous goods of Classes 2, 3, 4, 5, 6.1, 8 and 9," as amended from time to time. The CAN/CGSB-43.149 builds on the previous TP14877 and introduces the following changes:

- updates the list and editions of referenced documents applicable to ton containers;
- adds new definitions (e.g. fusible plug) to explain terms used in the standard;
- incorporates quality management system requirements for ton container manufacturers; and
- removes the requirements pertaining to tank cars as these are addressed in safety standard CAN/CGSB-43.147.

**CAN/CGSB-43.147 and CAN/CGSB-43.149**

Once both CGSB standards are incorporated into the TDGR, TP14877 would be simultaneously removed, rendering it a standard no longer actively used. The two new standards are not expected to impose any additional costs on affected stakeholders. This is because these new standards incorporate updates that stakeholders are either already complying with, had already planned to be compliant with, or require very few minor editorial changes to existing facility procedures and documents, such as updating references to the new CGSB standards. As a result, stakeholders will not incur any significant additional costs due to these new standards.

Furthermore, for both technical standards, CAN/CGSB43.147 and CAN/CGSB-43.149, the list of dangerous goods was revised to improve consistency with the TDGR and to better align with rail car packaging assignments in the 49 CFR. The TDGR provide

a list of dangerous goods via Schedule 1, which includes information such as UN Number, Shipping name and Description, special provisions that apply to the dangerous goods, the packing group (if applicable), and other information pertaining to the transport of specific dangerous goods. This list, however, generally does not encompass the intricacies of each specific container. For this reason, standards, such as CAN/CGSB-43.147 and CAN/CGSB-43.149, generally include some form of dangerous goods list with specific information on the means of containment in which they will be transported. As changes are made to Schedule 1 of the TDGR (whether such changes are needed to harmonize with the UN Model Regulations, to reflect updates about a specific dangerous good's chemical properties, or to add a new dangerous good that has been created), similar changes must be made to the standard's list of dangerous goods to provide consistent requirements.

► **View comments for the Description section** **2 comment(s)**

## Regulatory development

### *Consultation*

Consultations and engagement with key stakeholders related to this regulatory proposal started back in 2016. The timelines for the proposed Regulations have been postponed several times due to other priorities over the past few years, resulting in a noticeable gap between older consultations [23] and more recent consultations. In 2022, TC updated the Forward Regulatory Plan for this regulatory proposal to include additional updates and changes. [24]

TC presented the proposed amendments during the Transportation of Dangerous Goods General Policy Advisory Council (TDG-GPAC) meetings [25] in November 2021 and April 2022, with the intent of soliciting feedback on the proposed changes, the anticipated timelines for publication, and a proposed transition period for impacted stakeholders to come into full compliance.

TC also conducted an informal consultation on the proposed changes via email

between December 21, 2021, and February 4, 2022. TC received 15 submissions from industry associations (e.g. compressed gas industry, the petroleum products, and fertilizing industry), governmental agencies including federal and provincial agencies, first responders, and stakeholders involved in modal transport (air, truck, and rail).

In general, stakeholders were supportive of the proposed amendments that would improve clarity and better harmonize the TDGR with other federal regulations, like the PTNSR. Additional information and clarification on the proposed Regulations were sought for the buffer cars requirement and the agricultural anhydrous ammonia exemption.

**Buffer car requirement**

Stakeholders noted that it is common practice for short line carriers in Canada to move small unit trains of dangerous goods when shoving railcars from customer facilities. Therefore, requiring buffer cars for this type of movement would create an extra burden on impacted stakeholders as this would result in additional costs and delay in the efficient movement of freight.

TC recognizes this concern and would continue engaging and working with impacted stakeholders to provide support during the implementation process, which would include guidance materials and outreach. Furthermore, the proposed amendments would include a transition period of up to six months for affected stakeholders to come into compliance with the buffer car requirements.

Stakeholders also pointed out that the new proposed restrictions were not clear as to which car is prohibited from being placed next to an occupied railway vehicle including an occupied engine or tender. In light of this feedback, the proposed Regulations clarify that the placement of a placarded railway vehicle next to an occupied railway vehicle or to a railway vehicle that has a continual source of ignition would be prohibited.

**Agricultural anhydrous ammonia exemption**

Stakeholders expressed concerns about the proposed requirements for an approved ERAP for farmer-owned tanks and about the new marking requirements (i.e. tanks should be marked with visible letters and numbers on at least two opposite sides, with the ERAP telephone number as required under Part 7 of the TDGR). [26]

It should be noted that an ERAP would only apply to the transport of agricultural anhydrous ammonia in a nurse tank for any distance travelled on public roads that is more than 3 km. This means that the field application of agricultural anhydrous ammonia would not require an ERAP.

Stakeholders noted that there would be no issue extending the coverage of an existing ERAP for agri-retail companies to cover retailer-owned tanks. They also noted that there is no available data on the ERAP coverage for anhydrous ammonia that is in transport on public roads using farmer-owned tanks. [27] In addition, feedback suggested that there is no need for extra markings as current industry practices require the display of a 24h emergency phone number on all nurse tanks (i.e. retailer-owned tanks and/or farmer-owned tanks).

Taking into consideration these comments, TC organized further consultations with stakeholders to clarify and discuss the policy intent of the proposed changes and their potential impacts. It should be noted that TC is proposing to maintain the exemption for documentation requirements during the transport of anhydrous ammonia while requiring the display of the ERAP telephone number with letters or numbers on two opposite sides of the nurse tank. However, it is also important to note that the 24h emergency phone number used in practice is not necessarily the same number as the ERAP phone number. For example, retail-owned nurse tanks are required to be marked with a 24h emergency phone number under the Anhydrous Ammonia Code of Practice (PDF), which may be different than the TC approved ERAP telephone number that is required to be added on the shipping document.

In addition, stakeholders recommended giving nurse tanks owners (i.e. farmers) sufficient time to prepare and comply with the new requirements. In light of this

request, TC is proposing a transition period of 24 months for the agricultural anhydrous ammonia amendments to come into force after the publication of the proposed Regulations in the *Canada Gazette*, Part II.

In August 2022, TC engaged with the Department of Agriculture and Agri-Food Canada (AAFC) to discuss the scope of anhydrous ammonia transported in nurse tanks on public roads and to collect feedback on the proposed modifications. No specific concerns were raised.

Of note, stakeholders expressed support for the Part 12 and International Harmonization Update proposal pre-published in the *Canada Gazette*, Part I, in November 2022, as the proposed amendments would promote consistency with international codes, resulting in cost savings to industry, while maintaining or enhancing safety. Stakeholders also supported the proposed provisions that would increase alignment with international requirements and update the Canadian packaging standards. Some key stakeholders urged TC to expedite the publication of the final version of those proposed Regulations.

**Technical standards for the means of containment**

Using the existing requirements in the TP14877 standard, TC proposed an initial working draft for each of the new CGSB standards. The drafts were submitted to their respective technical committees for review, 179 changes were suggested by the committee members on the CAN/CGSB-43.147 standard, and 69 changes were suggested on the CAN/CGSB-43.149 standard.

The technical committees were composed of a variety of stakeholders, such as regulatory agencies, producers, users, and general interest, with a balanced matrix of voting members. A number of non-voting members and alternate members also participated in the committees' activities.

TC, the committee chairs, and the CGSB analyzed the comments received and developed a second working draft for each of the new CGSB standards (i.e. CAN/CGSB-43.147 and CAN/CGSB-43.149).

Two meetings occurred where the technical committees reviewed their respective second working drafts. The full committee meeting for CAN/CGSB-43.147 took place June 29 and 30, 2021, while the meeting for CAN/CGSB-43.149 occurred on November 17, 2021.

The CGSB released the drafts for both safety standards for a 60-day consultation period on the CGSB website, as well as on the TC website. The public review for CAN/CGSB-43.147 was held from June 7, 2022, to August 6, 2022, while the public review for CAN/CGSB-43.149 was held from August 24, 2022, to October 24, 2022.

For CAN/CGSB-43.147, a total of 64 comments were received during public consultation, originating from TC, the public, the railway industry, and the Canadian Association of Petroleum Producers. Thirty comments were editorial, 26 were of a technical nature, and 8 were requests for further clarification.

For CAN/CGSB-43.149, a total of 35 comments were received during public consultation, originating from TC, the Government of Saskatchewan, and the Compressed Gas Association. All 35 comments were editorial in nature: 29 focused on the translation from English to French; five were requests for clarification; and one suggested the modification of a title.

Both technical committees reviewed and addressed their respective comments prior to seeking a consensus that resulted in a ballot approval from the voting members for each standard. The two new standards were then published, in March 2023 and in April 2023, for CAN/CGSB-43.147 and CAN/CGSB-43.149, respectively, and will come into force upon publication of the proposed Regulations in the *Canada Gazette*, Part II.

### *Modern treaty obligations and Indigenous engagement and consultation*

In accordance with the *Cabinet Directive on the Federal Approach to Modern Treaty Implementation*, an analysis was undertaken to determine whether the proposed Regulations are likely to give rise to modern treaty obligations. This assessment examined the geographic scope and subject matter of the proposal in relation to

modern treaties in effect. Upon examination, no implications or impacts on modern treaties were identified.

### *Instrument choice*

Given that the TDGR govern the rules pertaining to the safe transportation of dangerous goods throughout Canada, it is through regulatory intervention that TC would achieve its objective to advance measures to further improve the safety of Canada's transportation system.

Canada, as a member of UN agencies, actively participates in the development of the UN Recommendations by (1) attending the UN Economic and Social Council Sub-Committee of Experts on the Transport of Dangerous Goods Meetings (held on a biannual basis) to discuss proposals aiming to amend the UN Recommendations; (2) bringing forward and submitting proposals to amend the UN Recommendations; and (3) providing expert advice and recommendations on international proposals. Further, Canada is expected to adopt into Canadian law the international requirements that are agreed upon and incorporated into the international models including the UN Recommendations. To become law in Canada, such requirements must be included in regulations. When there is misalignment with the UN Recommendations, this creates a burden for Canadian operators (as they have to deal with different sets of requirements) and could cause a potential economic disadvantage for trade chain partners. Therefore, no non-regulatory options were considered for changes aimed at aligning or harmonizing the TDGR with the UN Recommendations.

The proposed Regulations would update existing requirements for the rail transportation of dangerous goods to enhance crew safety. These updates would also promote efficient cross-border transportation of dangerous goods for Canada-U.S. trade by providing consignors and carriers with more uniform rules for buffer car requirements. If the status quo were maintained, crew members of unit trains would not benefit from the additional safety protection of buffer cars. In addition, ambiguity would persist about the conditions under which buffer cars could have a

negative impact on train dynamics. These changes must be set out in the regulations to fulfill TC's mandate to maintain a safe, secure, and efficient transportation system.

Finally, the proposed Regulations would address ongoing safety concerns related to the transport of anhydrous ammonia on public roads for agricultural purposes without an ERAP in place. It would not be possible to address these safety concerns through non-regulatory means, such as outreach or education because there is no formal obligation for emergency response personnel including retailers and distributors to respond in case of incidents involving farmer-owned nurse tanks.

The TP14877 standard is currently incorporated by static reference into the TDGR. In 2019, TC proposed to separate this standard into two different CGSB standards (rather than TC publications). Incorporation by reference enables TC to maintain agile regulatory frameworks that can more quickly adapt to changes in science or technology, or in response to emerging safety risks. Incorporation by reference can also contribute to international alignment on matters of trade. The incorporation by ambulatory reference of these new standards will optimize the TDGR by keeping them consistent with the most up-to-date version of the standards and the latest industry best practices. This approach results in a more efficient process for updates than a traditional regulatory amendment, while maintaining an adequate and transparent consultation process. Moreover, incorporating the new CGSB standards dynamically would promote a consistent approach throughout the TDGR since all other means of containment standards are already included as ambulatory references.

► **View comments for the Regulatory development section** **1 comment(s)**

## Regulatory analysis

The proposed Regulations would address ongoing safety concerns, strengthen existing rules, clarify provisions, remove inconsistencies, and introduce new rules. It is estimated that the regulatory proposal would impose a total cost of $6.36 million

(present value in 2021 Canadian dollars, discounted to the year of 2024 at a 7% discount rate) on affected stakeholders between 2024 and 2033, while also saving affected stakeholders $0.11 million in total during the same period. The proposed Regulations would result in a net cost of about $6.25 million between 2024 and 2033.

Stakeholder consultations allowed TC to collect pertinent information used in this analysis. For example, information provided by key stakeholders was used to estimate the costs associated with the buffer car requirements and the anhydrous ammonia exemption.

### *Analytical framework*

The costs and benefits associated with the proposed Regulations have been assessed in accordance with the *Policy on Cost-Benefit Analysis* of the Treasury Board of Canada Secretariat (TBS). Where possible, impacts are quantified and monetized, with only the direct costs and benefits for stakeholders being considered in the cost-benefit analysis.

Benefits and costs associated with the proposed Regulations are assessed based on comparing the baseline scenario against the regulatory scenario. The baseline scenario depicts what is likely to happen in the future if the Government does not implement the proposed Regulations. The regulatory scenario provides information on the intended outcomes as a result of the proposed Regulations.

The analysis estimated the impact of the proposed Regulations over a 10-year period from 2024 to 2033, with the year 2024 being when the proposed Regulations are expected to be registered. Unless otherwise stated, benefits and costs are expressed in present value in 2021 Canadian dollars, discounted to the year 2024 at a 7% discount rate.

### *Affected stakeholders*

The proposed Regulations would affect 26 active federally regulated railway companies, all of which are involved in the transportation of dangerous goods

throughout Canada. Among these railway companies, CN and CP are the largest carriers. [28]

The incorporation of international requirements (e.g. UN Recommendations) would affect some stakeholders who would need ECs to transport dangerous goods. Over the last 20 years, TC has issued 43 ECs to unique dangerous goods consignors and carriers under the existing TDGR, [29] 20 of which were issued to non-commercial businesses and 23 to commercial businesses. Among these 23 commercial businesses, 20 of them are considered small businesses. [30] The proposed Regulations would also affect some owners (i.e. farmers) of approximately 2 300 nurse tanks carrying agricultural anhydrous ammonia because such tanks would need to be covered by an ERAP. [31]

### *Baseline and regulatory scenarios*

Under the baseline scenario, the TDGR do not require unit trains transporting dangerous goods exclusively within Canada to place a buffer car between a railcar transporting a dangerous good and an occupied locomotive. Mixed commodity freight trains transporting dangerous goods are also exempted from including buffer cars if it is reasonable to conclude that buffer cars may negatively affect the train dynamic. Furthermore, agricultural anhydrous ammonia transported in nurse tanks of 10 000 L or less does not require an ERAP and documentation if it travels 100 km or less. In addition, in the baseline scenario, the TDGR would remain out of alignment with other domestic and international requirements and would continue to contain outdated provisions. TC safety standard, TP14877, would also remain incorporated by static reference in the TDGR. As such, the TDGR would continue to fall out of alignment with new and/or amended standards and the latest industry best practices. As a result, stakeholders would not only face confusion due to the lack of harmonization between domestic and international requirements, but would also need to request ECs (and renew every five years) for some activities.

Under the regulatory scenario, the proposed Regulations would enhance the safety for crews on trains by requiring at least one buffer car between an occupied

locomotive and a railcar transporting a dangerous good for all unit trains travelling within Canada and would clarify the conditions when train dynamics could be negatively impacted if buffer cars are added in the case of mixed commodity freight trains. The proposed Regulations would also remove the distance limit of 100 km and the quantity limit of 10 000 L exemption for nurse tanks transporting agricultural anhydrous ammonia and would require an ERAP to cover all agricultural anhydrous ammonia transported on public roads for any distance that is more than 3 km. The regulatory proposal would also update outdated provisions and incorporate by reference international requirements, which would facilitate compliance and eliminate the need for stakeholders to apply for and renew a number of ECs for some activities. Finally, TC safety standard, TP14877, would be replaced by two new standards (CAN/CGSB-43.147 for railcars and CAN/CGSB-43.149 for ton containers) and these new standards would be incorporated by reference in the TDGR, which would promote a consistent approach throughout the TDGR.

## *Costs and benefits*

### Costs

The total cost associated with the proposed Regulations is estimated at $6.36 million of which $6.35 million would be incurred by railway companies involved in the transportation of dangerous goods within Canada due to the buffer car requirement and $0.01 million by the Government associated with the inspections with farm owners of nurse tanks.

Buffer cars — capital cost

The capital cost of purchasing additional buffer cars was estimated to be $5.30 million based on the total number of required buffer cars needed by the railway companies and the cost per buffer car.

During stakeholder consultations, CN expected that 30 buffer cars, each of which would cost $100,000, would be required to comply with the proposed Regulations. Using this estimate and the share of dangerous good transported by each railway

company in 2019 in proportion to that of CN, [32] it was calculated that a total of 53 buffer cars would be required by six railway companies during the analytical time frame because of the proposed Regulations, assuming that railway companies with a share of at least 1% of the total dangerous good transported in 2019 would need to purchase additional buffer cars. [33] It is worth noting that this estimation is considered the upper bound of buffer cars required because in reality railway companies could adjust the utilization of their railcar fleet to minimize any potential purchase of a railcar to be used as a buffer car.

As a result, the one-time capital cost of purchasing buffer cars was estimated to be $5.30 million in 2024.

Buffer cars — operation and management cost

The operation and management cost of buffer cars is calculated by multiplying the number of unit train travels within Canada projected during the analytical time frame and the operation and management cost of buffer cars per unit train travel.

The number of domestic travels of unit trains in 2024 was estimated based on the average number of dangerous goods carload movements between 2019 and 2021. As shown in Table 1 below, 0.8% of the total crude oil carloads and 33.8% of all other dangerous good carloads were moved on domestic trips. Assuming each domestic travel of a unit train would require 100 carloads, [34] it was then estimated that a total of 143 domestic travels of unit trains would take place in 2024, 8 of which would transport crude oil and 135 would transport other dangerous goods.

**Table 1: Average number of carload movements by dangerous goods type and by trip definition (2019–2021)**

| | Non-domestic trips [*] | Domestic trips | Total trips | Non-domestic trips percentage | Domestic trips percentage |
|---|---|---|---|---|---|
| **Crude oil** | 101 067 | 778 | 101 845 | 99.2% | 0.8% |
| **All other dangerous goods** | 26 457 | 13 536 | 39 993 | 66.2% | 33.8% |

[*] Non-domestic trips include outbound to USA, inbound from USA and from a place in the USA through Canada to another place in the USA .

Source: Transport Canada

TC's most recent internal analysis on the transportation of crude oil by rail did not project any increase in carloads, and therefore it is assumed that the domestic travels of unit trains transporting crude oil between 2025 and 2033 would remain the same as those estimated in 2024. However, the same analysis projected an increase of 1% per year of the carloads with respect to other dangerous goods transportation by rail. As a result, a growth rate of 1% per year of the domestic travels of unit trains was assumed during the analytical time frame.

Stakeholders (CN and CP) also provided tariffs / fees to be charged onto shippers due to the addition of buffer cars, which are used as a proxy for the operation and management cost of buffer cars per domestic travel of unit trains (see Table 2 below).

**Table 2: Operation and management cost of buffer cars per domestic travel [35]**

| Operation and management items | Cost |
|---|---|

| | |
|---|---|
| Buffer car loading with non-dangerous material [36] | $300 |
| Switching and movement | $575 |
| Buffer car storage at a customer's facility (fee per day) | $60 [*] |

[*] Assuming each travel of a unit train would only require one day of storage at a customer's facility.

[36] It is assumed that all buffer cars included in trains carrying dangerous goods are loaded with non-dangerous commodity.

Source: CN and CP

It is assumed that each travel of a unit train would imply a unique cost of loading, switching and moving, and storing the buffer car for one day at a customer's facility. The costs of operation and management were obtained by multiplying the number of domestic unit train travels by the costs listed in Table 2, for a total estimated to be $1.05 million between 2024 and 2033.

**Agricultural anhydrous ammonia exemption**

Based on information provided by Fertilizer Canada (an industry association representing Canadian manufacturers, wholesalers, and retail distributors of fertilizers), 90% of agricultural anhydrous ammonia is transported in large volumes by a transport delivery unit (TDU) and is covered by an approved ERAP. [36] Eight percent of the remaining anhydrous ammonia is transported by nurse tanks that are owned by agri-retail companies, which have an approved ERAP. Agri-retailers can respond to any incidents involving their nurse tanks up to the capacity as defined in their approved ERAP. Some agri-retail companies also have a cradle-to-grave policy through a written agreement with manufacturers, which covers products throughout the supply chain to the end user application and, in such cases, there would be no

additional cost on agri-retail companies to utilize their approved ERAP.

The remaining 2% represents the anhydrous ammonia volume that is transported to and from an agri-retail location to a farm field by a farmer-owned nurse tank. Only anhydrous ammonia transported in farmer-owned nurse tank is likely not currently being covered under an ERAP.

Farm owners that transport anhydrous ammonia in nurse tanks on public roads would need an ERAP coverage, which would result in additional costs. Some farmers could decide to use another person's ERAP, as such they would only seek an authorization to use an approved ERAP, while some others could decide to have their own ERAP.

According to subject matter experts and based on TC internal sources, the cost to a farmer to use another person's ERAP would depend on the agreement between the farmer and the owner of the ERAP. This cost would vary but is expected to be minimal and less than costs associated with the development of their own ERAP. Under the option wherein a farmer decides to have his own ERAP, the cost of having an ERAP prepared, reviewed, and approved, is approximately between $1,000 to $5,000. [37] For this analysis, it is assumed that farmers who would need an ERAP coverage would only seek the option of an authorization to use an approved ERAP instead of an application to develop a new one. [38]

Additionally, farmers would be required to demonstrate their compliance with the proposed Regulations as part of TC inspections. Therefore, farmers would need to present the approved ERAP document to an inspector. Usually, an inspector calls ahead and gives some information in advance of what would be covered. If all required documents are ready at the time of the inspection, the associated opportunity cost for the extra time would be negligible (refer to the "One-for-one rule" section for further details).

The transportation of agricultural anhydrous ammonia on public roads for any distance that is more than 3 km, would be exempted from documentation requirements if the nurse tanks are marked with the ERAP phone number. The cost

that could be incurred by the owners of the tanks would be the cost of marking on the tank the ERAP phone number. It is expected that retail-owned ammonia nurse tanks would already have these markings on tanks based on the Anhydrous Ammonia Code of Practice requirements or have the proper documentation, but those owned by farmers may not. Due to lack of information, it is unknown how many farmers would be affected by this proposed requirement. Nevertheless, in case a farmer needs to mark the tank, [39] the cost of a single tank decal is expected to be $45, or $15 per tank if buying decals in bulk (over 100).

Due to lack of information, the number of farmers who would need an ERAP coverage is unknown, and therefore, it was not possible to estimate the total additional cost to be borne by these farmers.

**New safety standards (CAN/CGSB-43.147 and CAN/CGSB-43.149)**

The dynamic incorporation by reference of the two safety standards (CAN/CGSB-43.147 and CAN/CGSB-43.149) in replacement of the TP14877 would allow the proposed Regulations to stay up to date with industry developments and to respond to stakeholders' needs. Both CGSB safety standards were published in spring 2023. This change would require stakeholders to amend or edit referenced documents such as by updating references to the new CGSB standards. Stakeholders are already complying with the new standards or have already planned to comply with them. At the coming into force of the proposed Regulations, it is expected that very few stakeholders would still need to make minor editorial changes to their existing facility procedures. It is assumed that these stakeholders would not incur any significant additional costs due to these new standards.

**Cost to Government**

During routine inspections, under the new agricultural anhydrous ammonia exemption requirements, TC inspectors would now need to verify if farmers that are transporting agricultural anhydrous ammonia on public roads for any distance that is more than 3 km, have ERAP coverage and appropriate marking. Inspectors would need to verify the ERAP documentation and make sure the markings are properly

identified. Based on TC historical data, over the past four years, an annual average of 21 inspections have been conducted with farmers. It is estimated that TC inspectors will need an additional hour during its routine inspection to perform the required approved ERAP verification. [40] As a result, the proposed Regulations would impose an incremental monetized cost of $0.01 million to the Government.

**Qualitative costs to Government**

Buffer car verification and placement on unit trains for domestic travels would be done during routine inspections. This would be conducted using existing staff/ inspectors and is not expected to impose any additional significant time/costs to the inspection routine. [41]

As previously mentioned, with respect to requirements for an approved ERAP for farmer-owned tanks, it is assumed that farmers who would need an ERAP coverage would only seek the option of an authorization to use an approved ERAP instead of an application to develop a new one. In the eventuality where a farmer would opt to develop its own ERAP, farmers would need to seek its approval by TC. It is assumed that it takes a total of 3 hours for TC employees to approve an ERAP. A Remedial Measures Specialist would spend around 2.5 hours to assess the ERAP application and make a recommendation to the Chief of Response Operations who would decide whether the application is approved or not. Based on the recommendation, the final approval by the Chief of Response Operations is estimated to take approximately 0.5 hours. Under this possible circumstance, this would result in an undiscounted cost of $113 for TC to approve an ERAP.

TC's TDG Public Awareness Program regularly informs stakeholders of updates to the TDGR through education and awareness campaigns by developing information documents, reaching out to targeted audiences, answering questions from the industry, and doing presentations. It is expected that the proposed Regulations would not add additional financial costs to the program. Although any effort associated with outreach and awareness with respect to the proposed Regulations would impose opportunity costs to TC, such costs would be expected to be minimal.

TC would also assume some costs to update training materials and deliver training to existing TDG inspectors. These costs are expected to be negligible and would be managed within existing resources.

### Benefits

The proposed Regulations would result in better clarity and uniform interpretations of requirements across Canada, and further improve safety during the transportation of dangerous goods. Benefits from the proposed Regulations are, in most parts, discussed qualitatively. Still, the harmonization with international requirements and the incorporation of activities authorized under ECs into TDGR would result in a cost saving for the industry and to the Government.

Cost savings to industry

The proposed Regulations would no longer require stakeholders to apply for and renew ECs with respect to certain activities. Therefore, based on historical data of active ECS (new and renewals), a total of 43 existing ECs would be eliminated (see Table 3 below). TC does not expect to see a growth in the number of active ECs during the analytical timeframe.

**Table 3: Number of existing ECs to be eliminated**

| **Type of activities** | **Number of existing ECs to be eliminated** |
|---|---|
| EC to allow the use of oxygen cylinder with an open valve during transport for aeration of live fish or medical purposes | 24 |
| EC to permit the use of necessary dangerous goods by peace officers to carry out their duties | 17 |
| EC to permit the transportation of empty drums or IBCs containing residue of dangerous goods | 2 |
| **Total of ECs** | **43** |

It is assumed that a dangerous goods consignor would take three hours for a less

complex EC and five hours for a highly complex EC to fill out the requested documentation. Eighty percent of all the ECs to be eliminated are less complex and 20% are highly complex. As an EC is renewed every five years and assuming an equal distribution of ECs are requested over the years, it is estimated that 86 requests and renewals of ECs would be eliminated over a 10-year analytical timeframe. Using the average hourly wage rate of $59.42 for a manager, [42] it was estimated that the total cost savings associated with EC requests and renewals would be $0.01 million over the analytical period.

Cost savings to the Government

The cost savings to the Government are related to the time TC would save for no longer reviewing and issuing ECs. The time to review and issue an EC depends on the level of complexity. It takes around 12.75 hours to review and issue a less complex EC, but 48.75 hours for a highly complex EC (80% of all the ECs to be eliminated are less complex and 20% are highly complex). ECs are reviewed and approved through a multiple level process involving an administrative agent, a senior advisor, an engineer for highly complex ECs, and a chief of approval. Table 4 below shows TC employee hourly salaries.

**Table 4: TC employee hourly salaries**

| Employee position | Hourly salary [44] |
|---|---|
| Administrative agent | $40.92 |
| Senior advisor | $70.24 |
| Engineer | $79.77 |

44 Hourly salaries are based on Treasury Board of Canada Secretariat rate of pay for public service employees. The highest step of rate of pay is used plus a 30% overhead. Administrative agent, Senior advisor, Engineer and Chief of approval are respectively AS-1, PC-03, ENG-04 and PC-04.

| | |
|---|---|
| Chief of approval | $80.35 |

| | |
|---|---|
| 44 | Hourly salaries are based on Treasury Board of Canada Secretariat rate of pay for public service employees. The highest step of rate of pay is used plus a 30% overhead. Administrative agent, Senior advisor, Engineer and Chief of approval are respectively AS-1, PC-03, ENG-04 and PC-04. |

The proposed amendments would result in a cost saving of $0.10 million in total to TC for no longer needing to review and issue ECs.

**Qualitative benefits**

National and international alignment

Aligning with other Canadian and international requirements would benefit dangerous good consignors and carriers by reducing the burden associated with having to comply with different sets of rules, some of which would also address potential safety risks. For example, uniform and consistent sets of rules related to radioactive substances across Canada would facilitate shippers' compliance efforts and improve the overall safety (see explanations in the "Issues" section).

Given that rail transportation is an important component of Canada-U.S. trade, this regulatory proposal would support efforts made between Canada and the United States to reduce duplication across the Canada-U.S. border and to align, where possible, regulatory requirements respecting rail transportation in North America. As such, the proposed Regulations would facilitate cross-border trade, promote economic growth and, thus, benefit both consumers and businesses.

Outdated provision

The requirement to notify local police, in writing, about the nature of the dangerous goods in advance of the transport of these goods would not be necessary under the proposed Regulations since the transport of these dangerous goods must be

compliant with the regulatory requirements. The elimination of this action will reduce the burden on carriers.

Agricultural anhydrous ammonia in nurse tanks

The proposed amendments to replace the quantity limit of 10 000 L with the condition of using either a single tank or twin tank system configuration under the agricultural exemption would address potential public safety issues linked with the transport of large quantities of agricultural anhydrous ammonia in nurse tanks on public roadways with no ERAP in place. Given the growing demand for agricultural anhydrous ammonia observed between 2001 and 2021, multiple nurse tank systems are more frequently used in transport to cover the need for agricultural anhydrous ammonia. The new condition for the use of a single tank or twin tank configuration would help decrease the likelihood of exposure in the case of a release. Moreover, the requirement for all agricultural anhydrous ammonia in transport in a quantity above 3 000 L to be covered by an ERAP for any distance travelled on public roads that is more than 3 km would enhance public safety.

Buffer car requirements

The proposed Regulations would help enhance train safety by requiring at least one buffer car to be placed between an occupied locomotive and a rail car transporting a dangerous good for all unit trains travelling within Canada. The buffer car, which can be loaded with non-dangerous good materials or empty, is intended to keep dangerous goods separated from personnel, engine, or caboose and, if needed, to separate incompatible dangerous goods from each other. By creating a separation distance with the dangerous goods, the addition of a buffer car would allow train crews more time to safely exit a locomotive in the event of an incident.

In Canada, there has been no report on, or investigation of accidents directly related to the absence of buffer cars in unit trains transporting dangerous goods domestically. However, following the investigation of two separate derailments of unit trains carrying flammable liquids, which resulted in breached tank cars and fires in the United States, the U.S. National Transportation Safety Board recommended

the use of buffer cars to promote an adequate separation distance between dangerous goods cars and occupied railway vehicles for the protection of train crews during normal operations and accident conditions. [43]

Despite the net monetized cost of the proposal, TC considers that the total benefits — including qualitative safety benefits — would outweigh the monetized costs.

### Cost-benefit statement

Number of years: 10 (2024–2033)

Price year: 2021

Present value base year: 2024

Discount rate: 7%

**Table 5: Monetized costs (present value)**

| Impacted stakeholders | Costs description | Base year (2024) | Annual average (2025–2032) | Final year (2033) | Total present value | Annualized value |
|---|---|---|---|---|---|---|
| **Railway companies** | Buffer cars capital cost | $5,300,000 | $0 | $0 | $5,300,000 | $754,601 |
| | Buffer cars operation and management cost | $133,705 | $104,765 | $79,902 | $1,051,729 | $149,743 |
| **Transport Canada** | Inspection cost | $0 | $1,498 | $1,294 | $13,276 | $1,890 |
| **All stakeholders** | **Total costs** | **$5,433,705** | **$106,263** | **$81,196** | **$6,365,005** | **$906,234** |

**Table 6: Monetized benefits (present value)**

| Impacted stakeholders | Costs description | Base year (2024) | Annual average (2025–2032) | Final year (2033) | Total present value | Annualized value |
|---|---|---|---|---|---|---|
| Dangerous goods consignors and carriers | Cost savings to consignors and carriers | $1,737 | $1,297 | $945 | $13,057 | $1,859 |
| Transport Canada | Cost savings to TC | $13,016 | $9,715 | $7,080 | $97,818 | $13,927 |
| **All stakeholders** | **Total benefits** | **$14,753** | **$11,012** | **$8,025** | **$110,875** | **$15,786** |

**Table 7: Summary of monetized costs and benefits (present value)**

| Impacts | Base year (2024) | Annual average (2025–2032) | Final year (2033) | Total present value | Annualized value |
|---|---|---|---|---|---|
| **Total costs** | $5,433,705 | $106,263 | $81,196 | $6,365,005 | $906,234 |
| **Total benefits** | $14,753 | $11,012 | $8,025 | $110,875 | $15,786 |
| **NET COST** | **$5,418,952** | **$95,251** | **$73,172** | **$6,254,130** | $890,447 |

Qualitative costs

- Cost of ERAP coverage and/or proper nurse tank markings to farmer-owned nurse tank owners transporting agricultural anhydrous ammonia on public roads for any distance that is more than 3 km. The number of farmers affected is unknown, but the unit cost for each component is as follows:

- It is expected that it would cost approximately between $1,000 to $5,000 for farmers to have their own ERAP coverage.
- The cost to a farmer to use another person's ERAP would depend on the agreement between the farmer and the owner of the ERAP. This cost would vary but is expected to be minimal.
- The cost of a single tank decal is expected to be $45, or $15 per tank if buying decals in bulk (over 100).

Qualitative benefits

- Aligning with other requirements in Canada and international standards would facilitate cross-border trade and benefit consignors, carriers, consumers, and businesses by reducing confusion, improving safety, and promoting economic growth.
- Eliminating the requirement for carriers to notify local police about the nature of dangerous goods in advance would reduce the burden on carriers.
- By replacing the existing quantity limit with a requirement for a single tank or twin tank system configuration for transporting agricultural anhydrous ammonia, the proposed amendments would enhance public safety.
- The requirement of a buffer car between an occupied locomotive and a rail car transporting dangerous goods would enhance train and crew member safety.

### *Small business lens*

Analysis under the small business lens concluded that the proposed Regulations would impact small businesses. Dangerous goods carriers and consignors that are small businesses would benefit from the anticipated cost savings associated with the incorporation of new provisions, which would remove the need to apply for ECs for certain activities. Twenty consignors and carriers considered as small businesses would benefit from the removal of the need to apply for ECs. As a result, the total cost saving incurred by the 20 businesses was estimated to be $6,073, or $304 per business.

In addition, as previously discussed, some farm owners that would be transporting agricultural anhydrous ammonia on public roads using nurse tanks would be affected by the proposed Regulations. The farmer-owned nurse tanks would be required to be covered by an ERAP and marking would need to show the proper ERAP phone number if without proper documentation. Due to limited information, it is not possible to estimate how many farm owners are currently transporting agricultural anhydrous ammonia in nurse tanks on public roads that are not covered by an ERAP or are without the proper markings. However, small businesses could expect the following impacts:

- If the business decides to use another person's ERAP, the cost would depend on the agreement between the business and the owner of the ERAP. This cost would vary but is expected to be lower than the cost of developing an ERAP.
- If the business chooses the option to have its own ERAP, it would cost approximately between $1,000 to $5,000 to get ERAP coverage.
- The cost of a single tank decal is expected to be $45, or $15 per tank if buying decals in bulk (over 100).

The proposed Regulations would improve public safety by addressing risks identified in the transportation of anhydrous ammonia in nurse tanks. Small businesses (farmers) that need to comply with the ERAP requirements would have the flexibility to choose between developing their own ERAP or using another person's ERAP.

The buffer car requirements would not impose any cost on small business as railway companies which would be affected by the buffer car requirements are not considered small businesses.

**Small business lens summary**

Estimated number of small businesses impacted: 20

Number of years: 10 (2024–2033)

Price year: 2021

Present value base year: 2024

Discount rate: 7%

**Table 8: Compliance costs saving**

| Activity | Annualized value | Present value |
|---|---|---|
| Cost savings to consignors and carriers | $865 | $6,073 |
| **Total benefit** | **$865** | **$6,073** |
| **Benefit per impacted business** | **$43** | **$304** |

### *One-for-one rule*

The one-for-one rule applies since there would be an incremental decrease in the administrative burden on business. The proposal is, therefore, considered burden out under the rule. No regulatory titles are repealed or introduced.

As previously explained, 23 dangerous goods consignors and carriers would no longer need to request ECs and renew them every five years when needed. Using data and assumptions presented above, and the methodology prescribed in the *Red Tape Reduction Regulations*, it was estimated that the annualized administrative cost savings would be $355, or $15.42 per business (2012 Canadian dollars, 7% discount rate, base year of discounting in 2012) for a 10-year period between 2024 and 2033.

The proposed Regulations would require farm owners of nurse tanks to have an ERAP coverage. As discussed before, it is assumed that farmers would choose the option to seek the authorization to use another person's approved ERAP, which would not add an additional administrative burden.

However, during TC inspections, farmers that are transporting agricultural anhydrous ammonia on public roads would need to provide proof that they have an approved ERAP or an authorization to use an approved ERAP. Therefore, there could be an increase in the administrative burden on farmers by retrieving the documentation of an approved ERAP. It is estimated that it would take about five

minutes for a farmer to present the evidence of an ERAP coverage during an inspection. Based on TC internal data, an average of 21 inspections are conducted annually at farm sites where anhydrous ammonia is handled. For the calculation of the administrative burden, it is assumed that 50% of the average number of annual farmers' inspections would be on farmers that would be required to have ERAP coverage. Using the average hourly wage rate of $28.45 including 25% overhead, [44] the estimated annualized administrative cost to farmers would be $8, or $0.39 per farmer (2012 Canadian dollars, 7% discount rate, base year of discounting in 2012) for a 10-year period between 2024 and 2033. [45] Therefore, the estimated total net annualized administrative cost saving would be $347 on affected stakeholders.

It is also important to note that the proposed repeal of forms and tables would not result in incremental changes in the administrative burden on businesses. TC inspectors would continue collecting the same information from stakeholders but would record that information in new forms. Therefore, stakeholders would not be affected by this proposed amendment.

### *Regulatory cooperation and alignment*

The Regulatory Cooperation Council (RCC) is a joint initiative that brings together Canadian and US regulators to reduce unnecessary differences between their regulatory frameworks. It provides a forum for stakeholders to discuss regulatory barriers and identify opportunities for regulatory cooperation. Under the RCC, Canada and the US outline planned initiatives and identify opportunities to increase regulatory reciprocity on numerous issues, including the cross-border transportation of dangerous goods.

While the proposed Regulations are not directly related to a specific RCC initiative, they would complement efforts made under the Canada-US Regulatory Cooperation Council Work Plan to align requirements around the transportation of dangerous goods between Canada and the US, namely, the buffer car rules for unit trains.

This regulatory proposal would support efforts made between Canada and the US

to reduce duplication across the Canada-US border and to align, where possible, regulatory requirements respecting rail transportation in North America. As such, the proposed Regulations would facilitate cross-border trade, promote economic growth and, thus, benefit both consumers and businesses.

### *Strategic environmental assessment*

In accordance with the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, and the Transport Canada Policy Statement on Strategic Environmental Assessment (2013), the strategic environmental assessment process was followed for this regulatory proposal and a Sustainable Transportation Assessment was completed. No important environmental effects are anticipated as a result of this regulatory proposal. The assessment considered potential effects to the environmental goals and targets of the Federal Sustainable Development Strategy.

The proposed Regulations are not expected to reduce the risk of accidental release of anhydrous ammonia in transport. They would, however, enhance public safety by confirming that all anhydrous ammonia would be covered by an ERAP during transport. An ERAP would mitigate the risk and the damage associated with the accidental release of anhydrous ammonia during transport by improving the efficiency of the emergency response, as well as the cleaning time in the event of an accident.

### *Gender-based analysis plus*

The proposed Regulations would primarily impact companies, which are legal entities. They would impact stakeholders who import, handle, offer for transport or transport dangerous goods in Canada. As such, the proposed Regulations are not expected to have any differential impacts based on factors such as sex, gender, race, sexual orientation, age, disability, ethnicity, and/or religion. However, the proposed Regulations are expected to have a differential impact on farmers who own nurse tanks and who currently conduct transport activities of anhydrous ammonia without an ERAP in place. To assist farmers and to provide them with sufficient time to

comply with the new requirements, the requirements related to the transport of anhydrous ammonia would not come into force until 24 months after they are published in the *Canada Gazette*, Part II.

► **View comments for the Regulatory analysis section** **2 comment(s)**

## Implementation, compliance and enforcement, and service standards

### *Implementation*

#### Coming into force

The proposed Regulations would come into force after a six-month transitional period following the date of publication in the *Canada Gazette*, Part II, except for the agricultural anhydrous ammonia exemption.

#### Transition period for agricultural anhydrous ammonia exemption

The agricultural anhydrous ammonia exemption would come into force 24 months after the proposed Regulations are published in the *Canada Gazette*, Part II. This transition period would give famers sufficient time to prepare and comply with the new requirements.

#### Stakeholder awareness and inspector education

To raise awareness about the proposed Regulations after they are published in the *Canada Gazette*, Part II, TC would inform stakeholders of the amendments via the TDG Public Awareness Program which would include the following:

- providing updates at the TDG General Policy Advisory Council;
- publishing articles in the TDG Newsletter, which is distributed free of charge to more than 23 000 readers in Canada and abroad and posted on the TC website; and
- providing presentations at various conferences held by stakeholder groups (i.e. manufacturers and distributors of dangerous goods; road, rail, air and marine carriers; as well as first responders).

TC's TDG Inspector Education Program also develops, updates, and delivers training and training products along with standard operating procedures to promote a consistent and uniform application of the TDG Compliance Strategy. TDG inspectors receive training on all amendments to the TDGR. Stakeholder awareness, inspector education and training, compliance and enforcement would be managed within existing TC resources.

### *Compliance and enforcement*

TC inspectors regularly conduct scheduled and unscheduled inspections to verify if dangerous goods are handled, offered for transport, transported, or imported in compliance with the TDG Act and the TDGR. The proposed Regulations would be enforced as part of these inspections. For example, TC inspectors would, as applicable, verify the placement of buffer cars on unit trains for domestic voyages; check for proof of an approved ERAP for nurse tanks transporting agricultural anhydrous ammonia on public roads when applicable; and confirm that all marking, packaging, and documentation requirements are met. Any additional tasks would be conducted during regular inspection to promote compliance.

Should an inspector identify non-compliance with the TDGR, the inspector would determine the appropriate enforcement action to take, which would depend on the nature and severity of the infraction and any history of non-compliance. Appropriate action could include the issuance of verbal or written warnings, the detention of the dangerous goods, the issuance of a contravention ticket under the *Contraventions Act*, or recommending the revocation of a registration certificate or even a criminal prosecution. Any enforcement actions taken in relation to the proposed Regulations would be determined in accordance with TC's existing Enforcement Policy, which sets out guiding principles to help ensure that enforcement actions are consistent, predictable, and appropriately calibrated to the level of risk and harm associated with the infraction.

These enforcement actions are key elements of TC's efforts to reduce risk to life, to protect property, to reduce environmental impacts, and to support the continued

efficiency and effectiveness of the national transportation system.

**► View comments for the Implementation, compliance and enforcement, and service standards section** **1 comment(s)**

## Contact

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## PROPOSED REGULATORY TEXT

Notice is given that the Governor in Council proposes to make the annexed *Regulations Amending the Transportation of Dangerous Goods Regulations (Canadian Update)* under subsection 27(1) [a] of the *Transportation of Dangerous Goods Act, 1992* [b].

Interested persons may make representations concerning the proposed Regulations within 75 days after the date of publication of this notice. They are strongly encouraged to use the online commenting feature that is available on the *Canada Gazette* website but if they use email, mail or any other means, the representations should cite the *Canada Gazette*, Part I, and the date of publication of this notice, and be addressed to Lisa Tellier, Acting Chief Regulatory Development Division, Regulatory Frameworks and International Engagement Branch, Transportation of

Dangerous Goods Directorate, Department of Transport, 300 Laurier Avenue West, Ottawa, Ontario K1A 1J2 (email: TDGRegulatoryProposal-TMDPropositionReglementaire@tc.gc.ca).

Ottawa, November 30, 2023

Wendy Nixon
Assistant Clerk of the Privy Council

► **View comments for the PROPOSED REGULATORY TEXT section**

**1 comment(s)**

# Regulations Amending the Transportation of Dangerous Goods Regulations (Canadian Update)

## Amendments

**1 (1) The definition *TP 14877* in section 1.3.1 of the *Transportation of Dangerous Goods Regulations* [46] is repealed.**

**(2) Section 1.3.1 of the Regulations is amended by adding the following in alphabetical order:**

***CGSB-43.147***
means the National Standard of Canada CAN/CGSB-43.147, *Containers for transport of dangerous goods by rail*, published by the Canadian General Standards Board (CGSB), as amended from time to time. (*CGSB-43.147*)

***CGSB-43.149***
means the National Standard of Canada CAN/CGSB-43.149, *Ton containers for the transportation of dangerous goods*, published by the Canadian General Standards Board (CGSB), as amended from time to time. (*CGSB-43.149*)

**2 Section 1.3.2 of the Regulations is amended by adding the following after**

**paragraph (d):**

**(d.1)** CGSB-43.147;

**(d.2)** CGSB-43.149;

**3 Section 1.3.3 of the Regulations and the heading before it are repealed.**

**4 The heading "150 kg Gross Mass Exemption" before section 1.15 of the Regulations is replaced by the following:**

**150 kg Gross Mass**

**5 The heading before section 1.16 of the Regulations is replaced by the following:**

**500 kg Gross Mass**

**6 The heading before section 1.17 of the Regulations is replaced by the following:**

**Limited Quantities**

**7 The heading before section 1.17.1 of the Regulations is replaced by the following:**

**Excepted Quantities**

**8 Subsection 1.17.1(7) of the French version of the Regulations is replaced by the following:**

**(7)** Si des documents d'expédition ou d'autres documents accompagnent des marchandises dangereuses en quantités exceptées, ils doivent porter la mention « marchandises dangereuses en quantités exceptées » ou « dangerous goods in excepted quantities » et indiquer le nombre de contenants extérieurs.

**9 (1) Subparagraphs 1.18(a)(i) and (ii) of the French version of the Regulations are replaced by the following:**

**(i)** l'appareil médical est implanté dans une personne physique ou un animal ou porté par l'un d'eux,

**(ii)** le fauteuil roulant ou l'article médical est en transport et est destiné à l'usage personnel d'une personne physique;

**(2) Paragraph 1.18(b) of the Regulations is replaced by the following:**

**(b)** a cylinder containing compressed oxygen used during transport by an individual or an animal for medical purposes.

**10 The Regulations are amended by adding the following after section 1.18:**

**Class 7, Radioactive Materials, Medical Purposes**

**1.18.1** These Regulations do not apply to the offering for transport, handling or transport of dangerous goods included in Class 7 on a road vehicle, a railway vehicle or a vessel on a domestic voyage

**(a)** that are implanted in or administered into an individual or an animal for medical diagnosis or treatment purposes or that subsist in their remains;

**(b)** that are contained in a sample of material taken for bioassay purposes;

**(c)** that are contained in human or animal tissue samples, animal remains or a liquid scintillation medium, as set out in paragraph 2(2)(e) of the *Packaging and Transport of Nuclear Substances Regulations, 2015*; or

**(d)** that are in or on an individual who is transported for medical treatment because the individual has been subject to an accidental or deliberate intake or contamination.

**11 The heading before section 1.19 of the Regulations is replaced by the following:**

**Samples for Inspection or Investigation**

**12 The heading before section 1.19.1 of the Regulations is replaced by the following:**

**Samples for Classifying, Analyzing or Testing**

**13 The heading before section 1.19.2 of the Regulations is replaced by the**

**following:**

**Samples Demonstration**

**14 The heading before section 1.21 of the Regulations is replaced by the following:**

**Agriculture — 1 500 kg Gross Mass on Farm Vehicle**

**15 The heading before section 1.22 of the Regulations is replaced by the following:**

**Agriculture — 3 000 kg Gross Mass for Retail**

**16 The heading before section 1.23 of the Regulations is replaced by the following:**

**Agriculture — Pesticides**

**17 Section 1.24 of the Regulations and the heading before it are replaced by the following:**

**Agriculture — Anhydrous Ammonia**

**1.24 (1)** Parts 3, 7 and 17 do not apply to UN1005, ANHYDROUS AMMONIA, in the course of field application if it is contained in a nurse tank on a road vehicle that contains no more than two nurse tanks and, if it is transported on a public road, the distance travelled on the road is not more than 3 km.

**(2)** Parts 3 and 17 do not apply to UN1005, ANHYDROUS AMMONIA, if it is contained in a nurse tank in transport solely on land on a road vehicle and the nurse tank is marked with letters or numbers, at least 6 mm wide and 50 mm high, on two opposite sides, with the ERAP telephone number required under paragraph 7.3(2)(f).

**(3)** For the purposes of this section, ***nurse tank*** has the same meaning as in CSA B620.

**18 The heading before section 1.26 of the Regulations is replaced by the following:**

**Emergency Response**

**19 The Regulations are amended by adding the following after section 1.26:**

**Law Enforcement Officers**

**1.26.1** These Regulations do not apply to the offering for transport, handling or transport by a road vehicle, a railway vehicle or a vessel on a domestic voyage of dangerous goods that are in quantities necessary for a federal, provincial or municipal officer to carry out their duties with respect to the enforcement of federal, provincial or municipal law.

**20 The heading before section 1.27 of the Regulations is replaced by the following:**

**Operation of a Means of Transport or a Means of Containment**

**21 Paragraph 1.27(1)(d) of the Regulations is replaced by the following:**

**(d)** aeration, oxygenation, 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.

**22 (1) Paragraph 1.28(b) of the Regulations is replaced by the following:**

**(b)** the road vehicle has displayed on it

**(i)** the placards required under Part 4 for a large means of containment, or

**(ii)** the DANGER placard, if the requirements set out in section 4.16 are complied with;

**(2) Paragraph 1.28(d) of the Regulations is repealed.**

**23 The heading before section 1.30 of the Regulations is replaced by the following:**

**Ferries**

**24 The heading before section 1.31 of the Regulations is replaced by the**

**following:**

**Class 1, Explosives**

**25 Section 1.32 of the Regulations and the heading before it are repealed.**

**26 The heading before section 1.32.3 of the Regulations is replaced by the following:**

**Class 2, Gases, in Small Means of Containment**

**27 The heading before section 1.33 of the Regulations is replaced by the following:**

**Class 3, Flammable Liquids**

**28 Section 1.35 of the Regulations and the heading before it are replaced by the following:**

**UN1202, DIESEL FUEL, or UN1203, GASOLINE**

**1.35** Part 3, sections 4.12 and 4.15.2 and Parts 6 and 17 do not apply to the offering for transport, handling or transport 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;

**(b)** each means of containment has at least one label or one placard that is visible from outside the road vehicle during transport;

**(c)** each means of containment is secured to the road vehicle to prevent unintended movement during transport; and

**(d)** the total capacity of the means of containment is less than or equal to 2 000 L.

**29 The heading before section 1.36 of the Regulations is replaced by the following:**

**Class 3, Flammable Liquids, Alcoholic Beverages and Aqueous Solutions of Alcohol**

**30 (1) Subparagraphs 1.36(a)(ii) and (iii) of the Regulations are replaced by the following:**

**(ii)** is included in Packing Group II and is contained 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 contained in a means of containment with a capacity that is less than or equal to 450 L; or

**(2) Subparagraph 1.36(b)(ii) of the French version of the Regulations is replaced by the following:**

**(ii)** est contenue dans un petit contenant.

**31 The heading before section 1.39 of the Regulations is replaced by the following:**

**Division 6.2, Infectious Substances, UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B**

**32 The heading before section 1.41 of the Regulations is replaced by the following:**

**Biological Products**

**33 Paragraph 1.41(a) of the Regulations is replaced by the following:**

**(a)** are prepared in accordance with the requirements set out under the *Food and Drugs Act* or the *Health of Animals Act*;

**34 The heading before section 1.42 of the Regulations is replaced by the following:**

**Human or Animal Specimens**

**35 The heading before section 1.42.1 of the Regulations is replaced by the following:**

**Tissues or Organs for Transplant**

**36 The heading before section 1.42.2 of the Regulations is replaced by the**

**following:**

**Blood or Blood Components**

**37 The portion of section 1.42.3 of the Regulations before paragraph (b) is replaced by the following:**

**1.42.3** Part 3, sections 4.10 to 4.12 and Parts 6 to 8 and 17 do not apply to the offering for transport, handling or transport of dangerous goods that are medical waste or clinical waste if

**(a)** the dangerous goods are UN3291, CLINICAL WASTE, UNSPECIFIED, N.O.S., (BIO) MEDICAL WASTE, N.O.S., or REGULATED MEDICAL WASTE, N.O.S.;

**38 The heading before section 1.43 of the Regulations is replaced by the following:**

**Class 7, Radioactive Materials**

**39 (1) Paragraph 1.43(a) of the Regulations is replaced by the following:**

**(a)** satisfy the conditions in the *Packaging and Transport of Nuclear Substances Regulations, 2015* to be transported in an excepted package;

**(2) Paragraph 1.43(c) of the Regulations is replaced by the following:**

**(c)** are accompanied by a document that includes the information required by subparagraphs 29(2)(a)(i) to (v) of the *Packaging and Transport of Nuclear Substances Regulations, 2015*.

**40 The Regulations are amended by adding the following after section 1.43:**

**Radioactive Materials — Unknown Classification**

**1.43.1** Parts 2 to 7, 9 and 17 do not apply to the offering for transport, handling or transport of goods that include radioactive materials whose classification is unknown and cannot be readily determined if there is no loss or dispersal of the materials during transport and

**(a)** the materials are present in a load that is in transport to a location for proper

characterization in accordance with section 3 of the *Packaging and Transport of Nuclear Substances Regulations, 2015*, they have triggered a radiation monitor alarm and the maximum dose rate on any external surface of the vehicle that is transporting it is less than or equal to 500 µSv/h; or

**(b)** the materials are present in a load of waste that is in transport, they have triggered a radiation monitor alarm and the nuclear substance in the load is one or more of the medical isotopes set out in para-graph 2(2)(n) of the *Packaging and Transport of Nuclear Substances Regulations, 2015*.

**41 Section 1.44 of the Regulations and the heading before it are replaced by the following:**

**Residue of Dangerous Goods in a Drum or IBC**

**1.44** Parts 2 to 4, 7 and 17 do not apply to a residue contained in a drum or in an intermediate bulk container (IBC) that is in transport on a road vehicle, a railway vehicle or a vessel on a domestic voyage, except for the residue of dangerous goods included in Packing Group I, Class 1 or 7 or Division 4.3 or 6.2, if

**(a)** in the case of a residue contained in a drum,

**(i)** the drum is being transported to a facility for the purpose of reconditioning, remanufacturing and repair in accordance with CGSB-43.126, and

**(ii)** the drum is accompanied by a document that includes the class or division of each residue, followed by the words “Residue Drum(s)” or “fût(s) de résidu” and preceded by the number of drums containing dangerous goods in that class or division;

**(b)** in the case of a residue contained in an IBC,

**(i)** the IBC is being transported to a facility for the purpose of conducting IBC leak tests and inspections in accordance with CGSB-43.146, and

**(ii)** the IBC is accompanied by a document that includes the class or division of each residue, followed by the words “Residue IBC(s)” or “GRV(s) de résidu”,

and preceded by the number of IBCs containing dangerous goods in that class or division; and

**(c)** in the case of a residue contained in a drum or IBC on a road vehicle or railway vehicle, the vehicle has displayed the DANGER placard on it.

**42 The heading before section 1.45.1 of the Regulations is replaced by the following:**

**Marine Pollutants**

**43 (1) The portion of section 1.46 of the Regulations before paragraph (a) is replaced by the following:**

**1.46** These Regulations, except for Parts 1 and 2, do not apply to the following dangerous goods:

**(2) Subparagraph 1.46(c)(iii) of the Regulations is replaced by the following:**

**(iii)** activated or non-activated carbons that do not undergo dangerous self-heating in the course of a self-heating test carried out in accordance with section 33.4.3.3 of the Manual of Tests and Criteria;

**(3) Section 1.46 of the Regulations is amended by striking out "or" at the end of paragraph (o), by adding "or" at the end of paragraph (p) and by adding the following after paragraph (p):**

**(q)** the following light bulbs, provided that they do not contain mercury in quantities above those specified in special provision 127 or radioactive material:

**(i)** light bulbs collected from individuals when transported to a collection or recycling facility,

**(ii)** light bulbs that each contain not more than 1 g of dangerous goods and are individually packaged so that

**(A)** there is not more than 30 g of dangerous goods per means of containment, and

**(B)** the light bulbs are in inner packagings, separated by dividers, or surrounded with cushioning material to protect them, or

**(iii)** light bulbs containing no dangerous goods other than dangerous goods included in Division 2.2 and packaged so that any pieces of a ruptured bulb are contained by the packaging.

**44 Section 1.47 of the Regulations and the heading before it are repealed.**

**45 Subsection 3.5(3) of the Regulations is replaced by the following:**

**(3)** In the case of a means of containment containing only a residue, other than a residue of dangerous goods included in Class 2 that is contained in a small means of containment and other than a residue of dangerous goods included in Class 7, paragraph (1)(d) does not apply and the words "Residue" or "Résidu", or "Residue – Last Contained" or "Résidu – dernier contenu", may be added before or after the description of the dangerous goods if

**(a)** any indication of the quantity of dangerous goods has been crossed out; and

**(b)** in the case of a compartmentalized means of containment, every compartment contains a residue.

**46 Section 4.1 of the Regulations is replaced by the following:**

**4.1** A person must not import, offer for transport, handle or transport a means of containment that contains dangerous goods, including unpackaged articles containing dangerous goods other than articles that are included in Class 1, unless each dangerous goods safety mark required by this Part and illustrated in the appendix to this Part or illustrated in Chapter 5.2 or 5.3 of the UN Recommendations is displayed on them in accordance with this Part.

**47 The heading before section 4.1.1 of the Regulations is replaced by the following:**

**Voluntary Display of Dangerous Goods Marks**

**48 The portion of section 4.1.1 of the Regulations before paragraph (a) is**

**replaced by the following:**

**4.1.1** When a person transports dangerous goods on a road vehicle or railway vehicle and the person voluntarily displays dangerous goods marks on the vehicle, the following provisions apply:

**49 Section 4.15.4 of the Regulations and the heading before it are replaced by the following:**

**Visibility of Placards and UN Numbers on a Large Means of Containment**

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

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

**(3)** When a large means of containment that has placards or placards and UN numbers displayed on it is loaded onto a road vehicle or rail vehicle, the placards or placards and UN numbers that are required by this Part must also be displayed on the vehicle.

**50 (1) Subparagraph 5.10(1)(a)(vi) of the Regulations is replaced by the following:**

**(vi)** CGSB-43.149;

**(2) Subparagraph 5.10(1)(b)(ii) of the Regulations is replaced by the following:**

**(ii)** CGSB-43.147,

**(3) Subparagraph 5.10(1)(d)(ii) of the Regulations is replaced by the following:**

**(ii)** CGSB-43.147,

**(ii.1)** CGSB-43.149,

**51 (1) Subparagraph 5.14(1)(a)(iv) of the Regulations is replaced by the following:**

**(iv)** CGSB-43.149;

**(2) Subparagraph 5.14(1)(b)(ii) of the Regulations is replaced by the following:**

**(ii)** CGSB-43.147, or

**(3) Subparagraph 5.14(1)(d)(ii) of the Regulations is replaced by the following:**

**(ii)** CGSB-43.147,

**(ii.1)** CGSB-43.149,

**52 (1) The table to section 8.2 of the Regulations is amended by replacing "II" in the column "Packing Group or Category" opposite "1" in the column "Class or Division" with "Not applicable".**

**(2) The table to section 8.2 of the Regulations is amended by replacing "II or III, or without packing group" in the column "Packing Group or Category" opposite "9" in the column "Class or Division" with "Not applicable".**

**53 Section 10.1.1 of the Regulations is replaced by the following:**

**10.1.1** Despite the requirements of Part 5, a person may import, offer for transport, handle or transport dangerous goods by railway vehicle from a place in the United States to a place in Canada, from a place in Canada to a place in the United States 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 included in Class 3 and are referred to in clause 10.5.5 of CGSB-43.147.

**54 (1) The portion of subsection 10.6(1) of the Regulations before the table is replaced by the following:**

**10.6 (1)** A person must not transport by a railway vehicle dangerous goods described in column 1 of the table to this subsection by placing, in a train, the railway vehicle next to a railway vehicle described in column 2.

**(2) Paragraph 1(a) of the table to subsection 10.6(1) of the Regulations is repealed.**

**(3) Paragraph 1(b) of the table to subsection 10.6(1) of the Regulations is replaced by the following:**

| Item | Column 2<br>Railway Vehicle |
|---|---|
| 1 | (b) an occupied railway vehicle, including an occupied engine or tender; |

**(4) Section 10.6 of the Regulations is amended by adding the following after subsection (2):**

**(3)** Despite subsection (1), a person may transport by railway vehicle dangerous goods described in column 1 of the table to subsection (1) by placing, in a train, the railway vehicle next to a railway vehicle described in column 2, other than an occupied railway vehicle, if any other placement in the train would negatively impact train dynamics.

**55 Paragraph 10.7(4)(a) of the Regulations is replaced by the following:**

**(a)** a visual inspection in accordance with clause 9.5.6(a) and a structural integrity inspection in accordance with clause 9.5.7 of CGSB-43.147; and

**56 Section 10.8 of the Regulations is replaced by the following:**

**10.8** A consignor must, 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 CGSB-43.147 for TC117R tank cars;

**(b)** the number of tank cars owned or leased by the consignor that meet the requirements of CGSB-43.147 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 that meet the requirements of CGSB-43.147 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 that meet the requirements of CGSB-43.147 for enhanced Class 111 tank cars.

**57 Section 16.1 of the Regulations and the heading "Certificate of Designation" before it are repealed.**

**58 The heading before section 16.2 of the English version of the Regulations is replaced by the following:**

## Certificate of Inspection

**59 Sections 16.2 to 16.5 of the Regulations are replaced by the following:**

**16.2** A certificate provided by an inspector to a person under subsection 16.1(1) of the Act must include the following information:

**(a)** the seal number of any seal removed from a means of containment that was opened;

**(b)** the seal number of any new seal applied to a means of containment after the inspection or sampling;

**(c)** the UN number, shipping name and quantity of any dangerous goods subject to inspection or sampling;

**(d)** the mass or volume of any sample taken;

**(e)** a description of any means of containment that was opened and, if applicable, the serial number of the means of containment;

**(f)** a description of the means of transport used or to be used;

**(g)** the name, contact information and signature of the person to whom the certificate is provided;

**(h)** the name, certificate of designation number and signature of the inspector providing the certificate; and

**(i)** the geographic location and date of the inspection or sampling.

**16.3 (1)** An inspector who, under subsection 17(1) of the Act, detains dangerous goods or a means of containment must provide a notice of detention to the person who has the charge, management or control of the dangerous goods or the means of containment. The notice must include the following information:

**(a)** the UN number and shipping name of any dangerous goods detained;

**(b)** a description of any means of containment detained and, if applicable, the serial number of the means of containment;

**(c)** a description of any non-compliance, including the applicable references to the Act and these Regulations;

**(d)** the name and contact information of the person to whom the notice is provided;

**(e)** the name, certificate of designation number and signature of the inspector providing the notice;

**(f)** the geographical location where the notice is provided; and

**(g)** the date on which the notice is provided.

**(2)** The detention expires 12 months after the day on which the notice is provided, but it may be revoked earlier, in writing, by the inspector.

**(3)** A person may request a review of the detention at any time after it takes effect and the notice is provided to the person who has the charge, management or control of the dangerous goods or the means of containment. The request must be made in writing to the Minister and must include the following information:

**(a)** the name and address of the place of business of the person requesting the review;

**(b)** a copy of the notice;

**(c)** the reasons why the detention should be revoked; and

**(d)** all of the information necessary to support the request for the review.

**16.4 (1)** An inspector who, under subsection 17(2) of the Act, directs a person to take measures necessary to remedy non-compliance with the Act must provide the person with a notice of direction. The notice must include the following information:

**(a)** a description of any non-compliance, including the applicable references to the Act and these Regulations;

**(b)** a description of the measures in the inspector's direction;

**(c)** the name and contact information of the person to whom the notice is provided;

**(d)** the name, certificate of designation number and signature of the inspector providing the notice;

**(e)** the geographic location where the notice is provided; and

**(f)** the date on which the notice is provided.

**(2)** The direction expires 12 months after the day on which the notice is provided, but it may be revoked earlier, in writing, by the inspector.

**(3)** A person may request a review of the direction at any time after it takes effect and the notice is provided to the person who has the charge, management or control of the dangerous goods or the means of containment. The request must be made in writing to the Minister and must include the following information:

**(a)** the name and address of the place of business of the person requesting the review;

**(b)** a copy of the notice;

**(c)** the reasons why the direction should be revoked; and

**(d)** all of the information necessary to support the request for the review.

**16.5 (1)** An inspector who, under subsection 17(3) of the Act, directs that dangerous goods or a means of containment not be imported into Canada or that they be returned to their place of origin, must provide a notice of direction to the person who has the charge, management or control of the dangerous goods or means of containment. The notice must include the following information:

**(a)** the UN number and shipping name of any dangerous goods subject to the notice;

**(b)** a description of any means of containment and, if applicable, the serial number of the means of containment;

**(c)** a description of any non-compliance including the relevant references to the Act and these Regulations, as well as the reasons why measures to remedy the non-compliance are not possible or desirable;

**(d)** the name and contact information of the person to whom the notice is provided;

**(e)** the name, certificate of designation number and signature of the inspector providing the notice;

**(f)** the geographic location where the notice is provided; and

**(g)** the date on which the notice is provided.

**(2)** The direction expires 12 months after the day on which the notice is provided, but it may be revoked earlier, in writing, by the inspector.

**(3)** A person may request a review of the direction at any time after it takes effect and the notice is provided to the person who has the charge, management or control of the dangerous goods or the means of containment. The request must be made in writing to the Minister and must include the following information:

**(a)** the name and address of the place of business of the person requesting the

review;

**(b)** a copy of the notice;

**(c)** the reasons why the direction should be revoked; and

**(d)** all of the information necessary to support the request for the review.

**60 The portion of UN Number UN1044 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 5**<br>**Special Provisions** |
|---|---|
| **UN1044** | 109, 172 |

**61 The portion of UN Number UN1170 of Schedule 1 to the Regulations in columns 2 and 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 2**<br>**Shipping Name and Description** | **Column 5**<br>**Special Provisions** |
|---|---|---|
| **UN1170** | ETHANOL;<br>ETHANOL SOLUTION;<br>ETHYL ALCOHOL;<br>or<br>ETHYL ALCOHOL SOLUTION | 150, 174<br>17, 150, 174 |

**62 The portion of UN Number UN1389 of Schedule 1 to the Regulations in columns 2 and 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 2**<br>**Shipping Name and Description** | **Column 5**<br>**Special Provisions** |
|---|---|---|

| | | |
|---|---|---|
| **UN1389** | ALKALI METAL AMALGAM, LIQUID | 38, 170 |

**63 The portion of UN Number UN1390 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 5**<br>**Special Provisions** |
|---|---|
| **UN1390** | 170 |

**64 The portion of UN Numbers UN1391 and UN1392 of Schedule 1 to the Regulations in columns 2 and 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 2**<br>**Shipping Name and Description** | **Column 5**<br>**Special Provisions** |
|---|---|---|
| **UN1391** | ALKALI METAL DISPERSION;<br>or<br>ALKALINE EARTH METAL DISPERSION | 38, 170, 171 |
| **UN1392** | ALKALINE EARTH METAL AMALGAM, LIQUID | 38, 171 |

**65 The portion of UN Number UN1421 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 5**<br>**Special Provisions** |
|---|---|
| **UN1421** | 38, 170 |

**66 The portion of UN Number UN1544 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN1544 | 16, 169 |
| | 16, 169 |
| | 16, 17, 169 |

**67 The portion of UN Numbers UN1556 and UN1557 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN1556 | 16, 38, 169 |
| | 16, 169 |
| | 16, 17, 169 |
| UN1557 | 16, 38, 169 |
| | 16, 169 |
| | 16, 17, 169 |

**68 The portion of UN Number UN1570 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN1570 | 169 |

**69 The portion of UN Number UN1598 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN1598 | 169 |

**70 The portion of UN Number UN1621 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN1621 | 169 |

**71 The portion of UN Number UN1651 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN1651 | 169 |

**72 The portion of UN Numbers UN1655 and UN1656 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN1655 | 16, 169 |
| | 16, 169 |
| | 16, 17, 169 |

| | |
|---|---|
| **UN1656** | 169 |
| | 17, 169 |

**73 The portion of UN Number UN1674 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 5**<br>**Special Provisions** |
|---|---|
| **UN1674** | 169 |

**74 The portion of UN Number UN1686 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 5**<br>**Special Provisions** |
|---|---|
| **UN1686** | 169 |
| | 17, 169 |

**75 The portion of UN Numbers UN1704 and UN1707 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| **Column 1**<br>**UN Number** | **Column 5**<br>**Special Provisions** |
|---|---|
| **UN1704** | 169 |
| **UN1707** | 16, 169 |

**76 The portion of UN Number UN1869 of Schedule 1 to the Regulations in column 2 is replaced by the following:**

| Column 1<br>UN Number | Column 2<br>Shipping Name and Description |
|---|---|
| **UN1869** | MAGNESIUM;<br>or<br>MAGNESIUM ALLOYS |

**77 The portion of UN Numbers UN2024 to UN2027 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| **UN2024** | 16, 54, 169 |
| | 16, 54, 169 |
| | 16, 17, 54, 169 |
| **UN2025** | 16, 54, 169 |
| | 16, 54, 169 |
| | 16, 17, 54, 169 |
| **UN2026** | 16, 169 |
| | 16, 169 |
| | 16, 17, 169 |
| **UN2027** | 169 |

**78 The portion of UN Number UN2788 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN2788 | 16, 169 |
| | 16, 169 |
| | 16, 17, 169 |

**79 The portion of UN Number UN2857 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN2857 | 173 |

**80 The portion of UN Number UN2907 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN2907 | 38, 62 |

**81 The portion of UN Number UN3140 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN3140 | 16, 169 |

| | |
|---|---|
| | 16, 169 |
| | 16, 17, 169 |

**82 The portion of UN Number UN3144 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| **UN3144** | 16, 169 |
| | 16, 169 |
| | 16, 17, 169 |

**83 The portion of UN Number UN3146 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| **UN3146** | 16, 169 |
| | 16, 169 |
| | 16, 17, 169 |

**84 The portion of UN Number UN3155 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| **UN3155** | 169 |

**85 The portion of UN Numbers UN3205 and UN3206 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN3205 | 16, 171 |
| | 16, 17, 171 |
| UN3206 | 16, 170 |
| | 16, 17, 170 |

**86 The portion of UN Numbers UN3278 and UN3279 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN3278 | 16, 115, 169 |
| | 16, 169 |
| | 16, 17, 169 |
| UN3279 | 16, 115, 169 |
| | 16, 169 |

**87 The portion of UN Number UN3380 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| UN3380 | 16, 38, 62 |

**88 The portion of UN Numbers UN3401 and UN3402 of Schedule 1 to the Regulations in columns 2 and 5 is replaced by the following:**

| Column 1<br>UN Number | Column 2<br>Shipping Name and Description | Column 5<br>Special Provisions |
|---|---|---|
| **UN3401** | ALKALI METAL AMALGAM, SOLID | 38, 170 |
| **UN3402** | ALKALI EARTH METAL AMALGAM, SOLID | 38, 171 |

**89 The portion of UN Number UN3444 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| **UN3444** | 169 |

**90 The portion of UN Number UN3464 of Schedule 1 to the Regulations in column 5 is replaced by the following:**

| Column 1<br>UN Number | Column 5<br>Special Provisions |
|---|---|
| **UN3464** | 16, 169 |
| | 16, 169 |
| | 16, 17, 169 |

**91 The portion of UN Number UN3482 of Schedule 1 to the Regulations in columns 2 and 5 is replaced by the following:**

| Column 1<br>UN Number | Column 2<br>Shipping Name and Description | Column 5<br>Special Provisions |
|---|---|---|
| **UN3482** | ALKALI METAL DISPERSION, FLAMMABLE; or ALKALINE EARTH METAL DISPERSION, FLAMMABLE | 38, 170, 171 |

**92 Paragraph (a) of special provision 32 of Schedule 2 to the Regulations is replaced by the following:**

**(a)** the large means of containment is in standard with CSA B621 for transport by road vehicle or with CGSB-43.147 for transport by railway vehicle; and

**93 (1) Special provision 62 of Schedule 2 to the Regulations before the italicized text is replaced by the following:**

**62** These dangerous goods included in Division 4.1 may be offered for transport, handled or transported if they are packed in a means of containment so that the percentage of diluent in them will not, at any time during transport, fall below the percentage stated for the diluent in the descriptive text associated with the shipping name.

**(2) The italicized text at the end of special provision 62 of Schedule 2 to the Regulations is amended by adding “UN2907” and “UN3380” in numerical order.**

**94 Special provision 80 of Schedule 2 to the Regulations before the italicized text is replaced by the following is replaced by the following:**

**80** Despite section 1.17, a person must not offer for transport, handle or transport these dangerous goods unless they are in a packaging selected and used in accordance with CGSB-43.123.

**95 (1) Special provision 90 of Schedule 2 to the Regulations before paragraph (a) is replaced by the following:**

**90** Parts 3 to 6 and 8 do not apply to the offering for transport, handling or transporting of these dangerous goods on a road vehicle, a railway vehicle or a vessel on a domestic voyage if

**(2) Subparagraph (a)(ii) of special provision 90 of Schedule 2 to the Regulations is replaced by the following:**

**(ii)** are designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of these dangerous goods that could endanger public safety, and

**(3) Subparagraphs (c)(i) and (ii) of special provision 90 of Schedule 2 to the Regulations are replaced by the following:**

**(i)** is less than or equal to 75 kg for dangerous goods transported on the road vehicle or the railway vehicle, and

**(ii)** is less than or equal to 75 kg for dangerous goods transported on the vessel, excluding dangerous goods in a road vehicle or railway vehicle being transported on the vessel; and

**96 Special provision 125 of Schedule 2 to the Regulations before the italicized text is replaced by the following:**

**125** These dangerous goods may be offered for transport, handled or transported in accordance with subsections 1.17(2) to (4) on a road vehicle, a railway vehicle or a vessel on a domestic voyage if

**(a)** the dangerous goods are classified and authorized in accordance with the *Explosives Regulations, 2013*;

**(b)** the dangerous goods are contained in inner packagings that are placed in a strong outer means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including

handling, there will be no release of the dangerous goods that could endanger public safety;

**(c)** each inner packaging has a gross mass less than or equal to 5 kg; and

**(d)** the outer means of containment has a gross mass less than or equal to 30 kg.

**97 Schedule 2 to the Regulations is amended by adding the following after special provision 168:**

**169** These dangerous goods when offered for transport as pesticides must be imported, offered for transport, handled or transported under the relevant pesticide entry set out in Appendix A of the UN Recommendations.

*UN1544, UN1556, UN1557, UN1570, UN1598, UN1621, UN1651, UN1655, UN1656, UN1674, UN1686, UN1704, UN1707, UN2024 to UN2027, UN2788, UN3140, UN3144, UN3146, UN3155, UN3278, UN3279, UN3444, UN3464*

**170** The group of alkali metals includes lithium, sodium, potassium, rubidium and caesium.

*UN1389 to UN1391, UN1421, UN3206, UN3401, UN3482*

**171** The group of alkaline earth metals includes magnesium, calcium, strontium and barium.

*UN1391, UN1392, UN3205, UN3402, UN3482*

**172** Subsection 5.10(1) does not apply to the offering for transport, handling or transport of UN1044, FIRE EXTINGUISHERS, if the fire extinguishers

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

**(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.

*UN1044*

**173** These Regulations do not apply to UN2857, REFRIGERATING MACHINES, and refrigerating machine components if they contain less than 12 kg of gas included in Division 2.2 or less than 12 L of UN2672, AMMONIA SOLUTION.

*UN2857*

**174** These Regulations do not apply to an aqueous solution containing not more than 24% alcohol by volume.

*UN1170*

**98 (1) Schedule 3 to the Regulations is amended by replacing "ETHANOL with more than 24% ethanol, by volume" in column 1A with "ETHANOL".**

**(2) Schedule 3 to the Regulations is amended by replacing "ÉTHANOL contenant plus de 24 % d'éthanol, par volume" in column 1B with "ÉTHANOL".**

**99 (1) Schedule 3 to the Regulations is amended by replacing "ETHANOL SOLUTION with more than 24% ethanol, by volume" in column 1A with "ETHANOL SOLUTION".**

**(2) Schedule 3 to the Regulations is amended by replacing "ÉTHANOL EN SOLUTION contenant plus de 24 % d'éthanol, par volume" in column 1B with "ÉTHANOL EN SOLUTION".**

**100 (1) Schedule 3 to the Regulations is amended by replacing "ETHYL ALCOHOL more than 24% ethanol, by volume" in column 1A with "ETHYL ALCOHOL".**

**(2) Schedule 3 to the Regulations is amended by replacing "ALCOOL ÉTHYLIQUE contenant plus de 24 % d'éthanol, par volume" in column 1B with "ALCOOL ÉTHYLIQUE".**

**101 (1) Schedule 3 to the Regulations is amended by replacing "ETHYL ALCOHOL SOLUTION more than 24% ethanol, by volume" in column 1A with "ETHYL ALCOHOL SOLUTION".**

**(2) Schedule 3 to the Regulations is amended by replacing "ALCOOL ÉTHYLIQUE EN SOLUTION contenant plus de 24 % d'éthanol, par volume" in column 1B with "ALCOOL ÉTHYLIQUE EN SOLUTION".**

**102 (1) Schedule 3 to the Regulations is amended by replacing "MAGNESIUM in pellets, turnings or ribbons" in column 1A with "MAGNESIUM".**

**(2) Schedule 3 to the Regulations is amended by replacing "MAGNÉSIUM, sous forme de granulés, de tournures ou de rubans" in column 1B with "MAGNÉSIUM".**

**103 (1) Schedule 3 to the Regulations is amended by replacing "MAGNESIUM ALLOYS with more than 50% magnesium, in pellets, turnings or ribbons" in column 1A with "MAGNESIUM ALLOYS".**

**(2) Schedule 3 to the Regulations is amended by replacing "ALLIAGES DE MAGNÉSIUM, contenant plus de 50 % de magnésium, sous forme de granulés, de tournures ou de rubans" in column 1B with "ALLIAGES DE MAGNÉSIUM".**



## Coming into Force

**104 (1) These Regulations, except section 17, come into force on the day that, in the sixth month after the month in which they are published in the *Canada Gazette*, Part II, has the same calendar number as the day on which they are published or, if that sixth month has no day with that number, the last day of that sixth month.**

**(2) Section 17 comes into force on the second anniversary of the day on which these Regulations are published in the *Canada Gazette*, Part II.**

▸ **View comments for the Coming into Force section** 3 comment(s)

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# Footnotes

a S.C. 2009, c. 9, s. 25

b S.C. 1992, c. 34

1 A buffer car is an empty or loaded rail car with a non-dangerous commodity (ideally an inert material such as sand or gravel) placed between a locomotive and rail car carrying dangerous goods to create a safety distance by keeping dangerous goods away from train crew, the engine and caboose and giving the crew more time to exit the train safely in case of an incident.

2 The PTNSR, 2015, under the authority of the Canadian Nuclear Safety Commission (CNSC), the leading authority in Canada for the classification of radioactive materials, set out requirements for the packaging and transport of dangerous goods included in Class 7, Radioactive Materials.

3 Consignor is defined in the TDGR as a person in Canada who (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.

4 Railway vehicle is defined in the TDGR as 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.

5 Bad train dynamics or train movement along the tracks due to opposing reactions of interconnected rail vehicles can result in accelerated damage to railway vehicle connections which may lead to connection failure. This connection failure could be followed by portions of the train detaching, and eventually lead to train derailment.

6 Railroad Investigation Report RIR-22/13, CSX Transportation Derailment with Hazardous Materials Release and Fire, National Transportation Safety Board, February 13, 2020 (PDF).

7 A nurse tank is a cargo tank intended to transport bulk anhydrous ammonia for farming purposes. Farmers can apply anhydrous ammonia to their fields using nurse wagons, pulled behind a tractor. Some of these nurse wagons consist of multiple interconnected tanks, while newer wagons consist of a larger single tank installed on a wagon. These are all considered as nurse tanks. As bulk containers, nurse tanks in Canada are subject to standards from the Canadian Standards Association (CSA). These standards, CSA B620 and CSA B622 were updated in 2020 to reintroduce a specific tank type, TC 51, as the main type of nurse tank to be used in agricultural service. Source: New requirements for nurse tanks transporting anhydrous ammonia in Canada.

8 The Canadian production of agricultural anhydrous ammonia showed an increase of 719,000 metric tonnes between 2001 and 2021. Source: Statistics Canada. Table 32-10-0037-01 Canadian fertilizer production, by product type and fertilizer year, cumulative data and Table 32-10-0272-01 Canadian fertilizer production, by product type and fertilizer year.

9 In the UN Recommendations, dangerous substances are assigned to one of nine different classes based on the nature of the hazard or the most predominant hazards they present. Some of these classes are subdivided into divisions. For example, a dangerous substance containing unstable particles due to excess of energy which is capable of naturally emitting radiation as a form of releasing this extra energy is assigned to Class 7, Radioactive Materials.

10 Source: Canada Gazette, Part I, Volume 148, Number 26: Packaging and Transport of Nuclear Substances Regulations, 2014; Canada Gazette, Part II, Volume 149, Number 13 Packaging and Transport of Nuclear Substances Regulations, 2015

11 $LC_{50}$ 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.

12 $LD_{50}$ (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.

13 Unpackaged articles (other than Class 1 articles) are large and robust articles that cannot be packaged in accordance with the requirements of Chapter 6.1 or 6.6 of the UN Recommendations. Such articles can be transported empty, uncleaned, and unpackaged if the competent authority approves such transport. Source: Model Regulations on the Transport of Dangerous Goods, published by the United Nations.

14 An explosive is a solid or liquid substance (or a mixture of substances) or an article which is capable by chemical reaction of producing gas at such a temperature and pressure and at a speed to cause damage to the surroundings. Source: Model Regulations on the Transport of Dangerous Goods, published by the United Nations.

15 An IBC is defined in the CAN/CGSB-43.146-2016 as a rigid or flexible portable means of containment, other than a bag, box, drum or jerrican, as defined in TP14850, and that is designed for mechanical handling and is resistant to the stresses produced in handling and transport, as determined by tests.

16 CAN/CGSB-43.123 sets out the packaging requirements for aerosol containers and gas cartridges used for the transport of dangerous goods published by the Canadian General Standards Board.

17 Incorporate by reference is a technique that incorporates, in whole or in part, the content of a document (such as a directive, list, or standard) into a regulation without having to duplicate the document's text. When a document is incorporated by reference, the incorporated wording has the same effect as if it appeared in the regulation and is legally binding.

18 In 2013, TC published the 1st edition of TP14877 (Containers for Transport of Dangerous Goods by Rail) to replace the rail tank standard originally developed by Canadian General Standards Board standard (CGSB-43.147)

19 Static incorporation is the incorporation by reference of a document into a regulation, as it exists on a particular date. Any amendment to the document would not take effect in the regulations, unless the regulations are amended through the usual regulatory process to reference the newer version. In the absence of such a regulatory change, the originally referenced version remains in force for the purposes of the regulations.

20 Dynamic incorporation is the incorporation of a document into a regulation, as it is amended over time. Any change to the document would immediately become part of the regulation or law without going through the entire regulatory process. Unlike static references, dynamic references do not have to mention a specific version or date of issue of the document.

21 Source: What We Heard Report on Regulatory Reviews and modernization stakeholder consultations: Transportation and infrastructure.

22 The average area of a farm has increased from 598 acres in 1991 to 809 in 2021 leading to an average increase of 211 acres. To note, the average area of a farm has shown a slight decrease of almost 11 acres between 2016 and 2021. Source: Statistics Canada. Table 32-10-0153-01 Land use, Census of Agriculture historical data.

23 Consultations on this regulatory proposal began in 2016. For example, TC has been working closely with the Canadian fertilizing industry since 2016 on the proposed modifications to the agricultural anhydrous ammonia exemption outlined in this regulatory proposal. For ease of readability and clarity, however, only consultations that took place after 2021 will be the focus of this section.

24 The Forward Regulatory Plan of this regulatory proposal was first published in 2018.

25 The TDG-GPAC is a working group reporting on classification, emergency response and means of containment and provides TC with advice on all matters related to the transportation of dangerous goods. TDG-GPAC is composed of 40 different industry associations.

26 In Canada, nurse tanks are divided into two categories, retailer-owned tanks (~80%) and farmer-owned tanks (~20%). This proposal would mostly impact farmer-owned tanks (estimated 2 300 tanks).

27 Over the past three years, TC sought input and data from the farmers' associations in Canada via the fertilizer industry. No responses from the farmers were received.

28 Based on the 2019 waybill data tracked by TC, CN and CP transported 56.6% and 31.5% dangerous goods to or from the United States.

29 Each affected stakeholder only requires one EC.

30 A small business is a company with fewer than 100 employees or a company that has $5 million or less in annual revenue.

31 Due to lack of data, the number of tank owners of nurse tanks that are not covered by an ERAP is unknown.

32 Share calculation is based on the total of 83 543 813 tons of dangerous goods transported by rail in 2019.

33 Based on the historical data, railway companies that carry less than 1% of the total dangerous goods transported by rail (proxy for railway movements) have low train movements that would not justify the purchase of additional railcars to be used as buffer cars.

34 Based on a new approach taken by TC to estimate the number of railcars per train across Canada, using videos and pictures plus artificial intelligence to estimate the number of railcars. The estimate of 100 railcars per unit train is an average number of both small and long unit train movements on the Canadian main rail network. Meaning, the estimate does not account for shoving/pushing movement of railcars from a customer facility to the main rail network.

35 It should be noted that type of services provided (i.e. switching, storage, other requirements) by railway companies to operate/manage a buffer car will vary depending on customer needs. Table 2 is an average representation of fee charged (cost) to operate/manage a buffer car.

36 TC approved ERAP

37 TC internal sources.

38 It is acknowledged that in some circumstances, a farmer would prefer opting to develop its own ERAP rather than using another person's ERAP.

39 Due to the lack of data, it is unknown how many farmer-owned tanks (estimated at 2 300 tanks) would be affected by the new requirements. Only nurse tanks that would be transporting agricultural anhydrous ammonia on public roads that do not have an ERAP, and do not have the proper marking identifying the ERAP telephone number, would be affected.

40 The inspection is performed by two TC inspectors (TI-06 and TI-05, based on Treasury Board of Canada Secretariat salaries at the highest step).

41 Rail inspection process covers a general list of requirements to be verified by an inspector. The average level of effort and time to complete an inspection does not vary significantly on an inspection where a buffer car on a train is required compared to an inspection where this requirement is not required.

42 Source: Statistics Canada, 2016 Census of Population, Statistics Canada Catalogue No. 98-400-X2016356. Occupational code: 0731 (Manager in transportation). Twenty-five percent overhead is used.

43 Railroad Investigation Report RIR-22/13 - CSX Transportation Derailment with Hazardous Materials Release and Fire, National Transportation Safety Board, February 13, 2020. (PDF)

44 Source: Statistics Canada. Table 14-10-0307-01 Employee wages by occupation, annual, 1997 to 2018, inactive. Natural resources, agriculture and related production occupations.

45 The ERAP requirement would come into force 24 months after the proposed Regulations registration.

46 SOR/2001-286