

Transportation of Dangerous Goods (TDG) Directorate



Presentation at the Canadian Explosives Industry Association (CEAEC) Annual General Meeting

May 31, 2023

Presented by: **Ayda Elhage**, Analyst - Special Regulatory Projects
Danny Bechamp, Senior Advisor, Approvals Division
Regulatory Frameworks and International Engagement (RFIE) Branch



Transport
Canada

Transports
Canada

Canada

Outline

Part 6, Training Requirements

Part 17, Registration Database – Client Identification Database (CID)

International Harmonization Update and Part 12, Air

Ongoing Regulatory amendments

Transport Canada (TC) Ammonium Nitrate Regulations and best practices publication

CAN/CGSB 43.151 Explosives Packaging standard committee

UN3375 / EC 13715 update

Sustainable Practices in Explosives Packaging

Part 6, Training Requirements

Training Standard Publication CGSB*-192.3

- November 2020

Pre-Publication

- 60-day Consultation *Canada Gazette*, Part I (CGI), December 2021

Informal Consultation

- Summer – Fall 2022

Final Publication

- *Canada Gazette*, Part II (CGII), Fall 2023



Objective

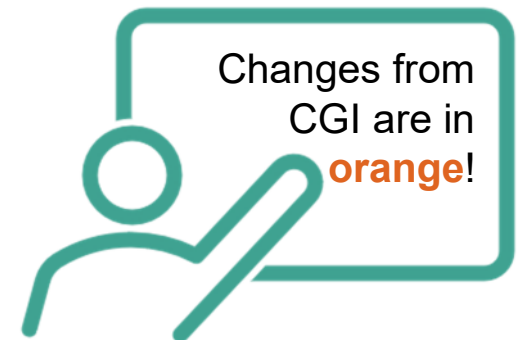
Clarify existing training requirements by adopting a **Competency-Based Training and Assessment (CBTA)** approach

*CGSB: Canadian General Standards Board

Part 6, Training Requirements (cont'd)

Proposed changes from CGI

- Removes the term **adequately trained**.
- Incorporates the new **CGSB training standard as published**.
- Requires training and assessment, including both general awareness training and function-specific training, **commensurate with the individual's responsibilities** to be considered competent.
- Documents training & assessment through a **certificate proof of competency** replacing the current “certificate of training”. **This proof can be either the person's record of training or a document that summarizes its details.**
- Provides a **12-month transitional** period and a **soft implementation approach** to support stakeholders .



PART 17, Registration Database (CID)

PURPOSE

Create an accurate and reliable inventory of regulated parties and sites where dangerous goods (DGs) are handled, offered for transport, transported, or imported (HOTI) in Canada.

PROGRESS TO DATE

- CGI: June 25, 2022
- 70-day consultation
- Digital solution under development
- Pilot testing with industry

NEXT STEPS

- Developing guidance materials and awareness activities
- CGII: Fall 2023

PART 17, Registration Database (CID) (cont'd)

Proposed changes from CGI

CG I Concerns



Extended information requirements causing administrative burden.



The following requirements were deemed too prescriptive:

- Reporting on previous year;
- fixed anniversary date;
- 30-day period to update administrative information; and
- Two (2) contacts per sites.



Registration requirements were deemed unclear.



Registration of new persons after the coming into force of the Regulations.

CG II intentions



TC intends to repeal the extended information requirements.



TC intends to add the following modifications to the Regulations:

- Reporting data based on previous fiscal year;
- Renewal date – Within 30 days of anniversary date;
- Update administrative information within 60 days of the change; and
- Two (2) contacts per business.



TC intends to modify the Site definition and provide more examples in guidance documents.



TC intends to remove this requirement and to require that all persons be registered prior to beginning their DG activities while including a 12-month transition period.



International Harmonization Update & Part 12 (Air)

Pre-publication in CGI

What we heard!

International Harmonization Update & Part 12 (Air)

Overview

Issues

- The *Transportation of Dangerous Goods Regulations* (TDGR) **are not fully up to date** with the latest versions of the international codes and **not harmonized** with the *49 Code of Federal Regulations* (49 CFR):
 - **imposing economic burden & affecting supply-chain agility.**
- Air provisions of the TDGR **do not reflect domestic needs** including the transport of DGs to remote communities.

Regulatory Proposal



International Codes

- Dynamic referencing of DG classification methods to reduce burden.
- Updating to **latest United Nations (UN) packaging designs.**
- Aligning rules for **transport of lithium batteries, vehicles & fertilizers.**



United States (U.S.) Regulations

- Allowing DG transport under U.S. rules for shipments destined or returning to the U.S. to **improve agility.**
- Recognizing special permits** issued and marking prescribed by the U.S. to reduce administrative burden.



Air Transportation

- Updating reporting rules of undeclared DG to reduce administrative burden.
- Allowing for the transport of **low-risk DG to remote communities.**
- Updating air rules to **eliminate current EC*.**

*EC: Equivalency Certificate or permit for equivalent level of safety

International Harmonization Update & Part 12 (Air) (cont'd)

Overview (cont'd)

Objectives

- **Enhance safety.**
- **Improve consistency** with international codes and U.S. Regulations.
- **Promote competitiveness** for DG packaging manufacturers.
- **Facilitate air transport.**



Qualitative Benefits

- ✓ Harmonization with UN – **Cost savings** for industry.
- ✓ Dynamic referencing – TC seen as an **agile regulator**.
- ✓ Modernization of air transport rules – Air carriers agree with approach for **remote communities**.
- ✓ **Guidance material** will accompany final regulations.

PROGRESS TO DATE

- ☐ Proposed amendments were pre-published in CGI on November 26, 2022
- ☐ Stakeholders were initially given 75 days to submit comments then an extension of 19 days was granted.
- ☐ 16 submissions received as of February 28, 2023.
- ☐ Support from DG community with few concerns were raised during the consultation period.

International Harmonization Update & Part 12 (Air) (cont'd)

What we heard! – CGI

Part 9 (Road) & Part 10 (Rail) –Transporting Dangerous Goods from the U.S. into or through Canada

Issue

Allowing the transport of dangerous goods under **DOT* Special Permits** (SP) via road/rail from Canada to U.S. will create some challenges

“**TDG personnel are not experts on U.S. SP.** Thus, we would **not be able to conduct any compliance activities** for the shipments that fall under the proposed amendment.”

***Canadian particularity:** For example, TC elaborated requirements for **tank cars stub sills due to safety issue** that required several **Protective Directions in the past**. However, this safety issue is not directly addressed to the same extent by the U.S. DOT.”

*DOT: Department of Transportation

2023-05-31

Challenges

- 1- This change allows road/rail shipments originating from Canada under a DOT SP without the possibility of expert inspection at place of origin
- 2- should be subject to consultation with the U.S. DOT

“**US DOT SP** are conceived to waive requirements under the 49 CFR and consider justifications based on the U.S. environment for transport. -- **do not consider the TDGR & the Canadian environment for transport /../** or Canadian particularities*”



RDIMS: 19274132

International Harmonization Update & Part 12 (Air) (cont'd)

What we heard! – CGI (cont'd)

Part 12 (Air) – Repeal of Standard MIL-T-52983G

Issue

The repeal of the standard **MIL-T-52983G** before the publication of **CSA* B627** will create additional problems / challenges.

Challenges

- 1- **Additional administrative burden on stakeholders** to submit applications for ECs.
- 2- **Additional burden on TC** to review and approve these Ecs.

“The mandate for our **CSA B627** technical committee captures the specifications **designed to replace MIL-T-52983G**”... “While the committee process and draft **is substantially complete our approval timeline was hindered significantly through the pandemic.**”



“The plan to repeal [**MIL-T-52983G**] will definitely **cause operational and potentially legal ramifications to operators and end users** which ultimately will increase the workload for TC.”

* CSA: Canadian Standards Association

International Harmonization Update & Part 12 (Air) (cont'd)

What we heard! – CGI (cont'd)

Part 12 (Air) – Air provisions, Reporting, Transport document

Issues

The new provisions for **retention period** of transport document & the **monthly reporting** of undeclared / misdeclared DGs in passenger's baggage generated two (2) opposite reactions.

Full Support of

“provision **for a one-year retention period** [of transport document].”

“**Monthly submission** of reports of DGs found in passenger's baggage”.

Challenges

- 1- One-year retention period is **not consistent** with other provisions of the TDGR.
- 2- Monthly reporting **can lead to information loss** → will compromise the inspectors' duties.

“For consistency & alignment with other requirements in the TDGR [Part 3 & 6], we recommend **copies of documents be retained for two (2) years** (instead of the proposed one (1) year).”

Vs

“Monthly reporting for undeclared/misdeclared DGs discovered in passenger 's baggage **will not allow for inspectors to follow-up accordingly**. Even **when the report is only a few days old, much of the evidence is gone**”.

International Harmonization Update & Part 12 (Air) (cont'd)

Next Steps

- Address the proposal taking into account all comments received.
- CGII publication scheduled for spring 2024.
- Release of Guidance Materials on TC website.





Ongoing Regulatory Amendments

Regulatory Project going to *Canada Gazette, Part I (CGI)*

Canadian Update

- Update and clarify the TDGR to align with new industry practices and address comments received over the years.
- **CGI - fall 2023**

Remotely Piloted Aircraft (RPA)

- Provide specific requirements for the TDG by RPA, also known as drones, while minimizing safety risks.
- **CGI – spring 2024**

Regulatory Projects going to CGII

Miscellaneous Amendment Regulations (MAR)

- Bring forward administrative changes to the TDGR.
- **CGII – spring 2023**

Part 6, Training

- Clarify existing training requirements by adopting a CBTA approach.
- **CGII – fall 2023**

Part 17, Registration Database (CID)

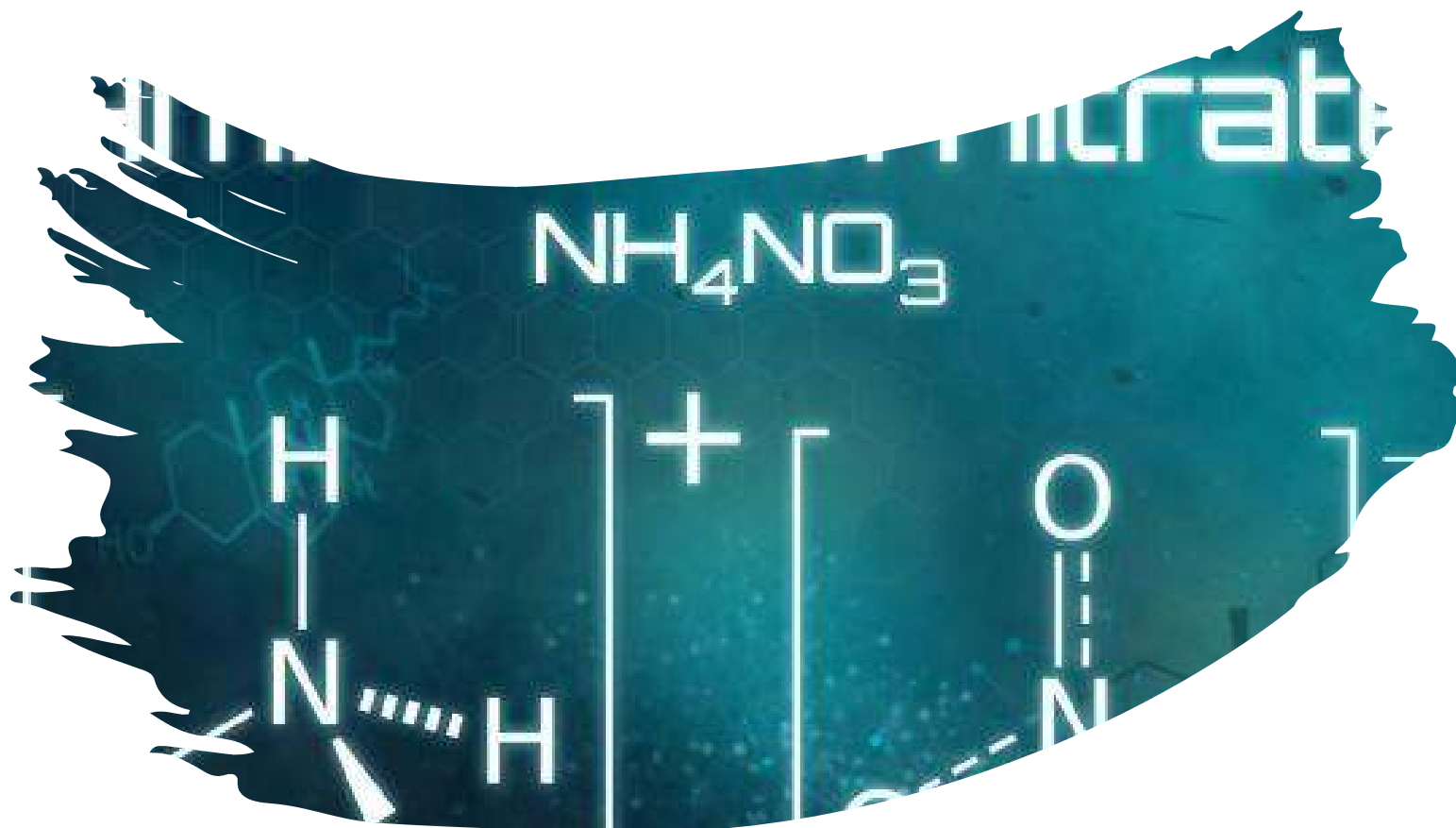
- Create an accurate and reliable inventory of regulated parties and sites where DGs are handled, offered for transport, transported, or imported (HOTI) in Canada.
- **CGII – fall 2023**

International Harmonization update and Part 12, Air

- Modernize outdated domestic requirements for the transport of DGs by air, align the TDGR with updates from the international codes.
- **CGII – spring 2024**

Fee Modernization: Means of Containment (MOC) Facilities Registration Program

- Introduce new fees and service standards for the TDG MOC Facilities Registration Program.
- **CGII fall 2024**



TC Ammonium Nitrate Regulations and Best Practices Publication

TC Ammonium Nitrate Regulations and Best Practices Publication

PURPOSE: Conduct a review of the Canadian regulatory framework pertaining to storage, handling, and transport of ammonium nitrate & explore potential opportunities for further clarification & international harmonization.

Catalyst for Regulatory Review

August 2020 - Explosion at the Port of Beirut, Lebanon (< 2,000 tons of Ammonium Nitrate Ignites).



PROGRESS TO DATE

- Report published on TC website in **July 2022** in both languages English & French.
- **Title:** *A review of ammonium nitrate regulations and best practices in Canada.*
- **Link:** <https://tc.canada.ca/en/dangerous-goods/publications/review-ammonium-nitrate-regulations-best-practices-canada>

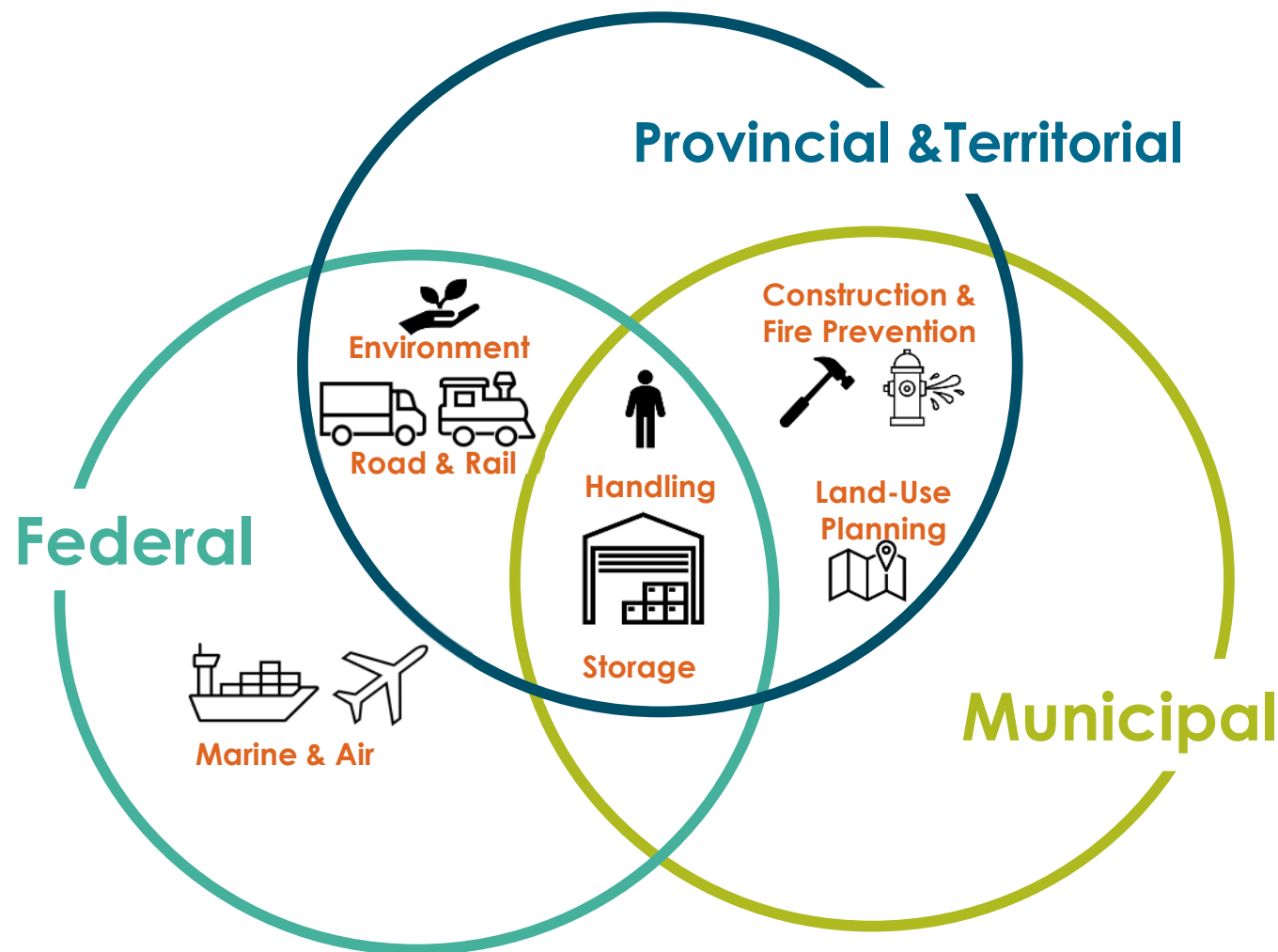
A review of ammonium nitrate regulations and best practices in Canada

Findings

Canadian Regulatory Framework

A **SHARED RESPONSIBILITY** between **Federal, Provincial & Territorial**, and **Municipal** levels of government.

This framework is robust and is supported by industry's comprehensive **CODES OF PRACTICE** and **BEST PRACTICES**.



Canada is the fifth (5th) largest producer of ammonium nitrate in the world of more than 650,000 tons/year.

A review of ammonium nitrate regulations and best practices in Canada (cont'd)

Findings (cont'd)

Explosive Grade Ammonium Nitrate

No Challenges Identified

Existing regulations related to ammonium nitrate used in explosive mixtures are highly controlled at the federal level by **Natural Resources Canada (NRCan)**.

Fertilizer Grade Ammonium Nitrate

Minor Challenges Identified

TC Regulations

Some regulatory provisions pertaining to storage of ammonium nitrate are open to interpretation and offer limited guidance.

Multiple Jurisdictions

Regulated entities must navigate set of regulations at all levels of government to identify and comply with applicable storage requirements.

International Best Practices

International counterparts have comprehensive codes of practice to support stakeholders and prescribe safety requirements, but confusion remains.

A review of ammonium nitrate regulations and best practices in Canada (cont'd)

What was done

Fertilizer Canada Forum

TC sponsored and participated in Fertilizer Canada Ammonium Nitrate Forum held in June 2021.

TC shared the findings from the regulatory review with Other Government Departments and with Canadian Industry.



Risk Assessment

TC conducted a risk analysis to explicitly measure the risk of ammonium nitrate, explosive and fertilizer grades, and determine whether the risk can be deemed to be tolerable.



UN/OECD* Seminar

In follow-up to the 2020 Beirut port explosion, TC shared the findings from the regulatory review with the international community.

TC coordinates with Environment and Climate Change Canada (ECCC), CBSA, NRCan & Health Canada on topics involving DGs.

TC is participating in ongoing efforts with international partners (RPMASA**).



*UNECE Convention on the Transboundary Effects of Industrial Accidents & the Organization for Economic Co-operation and Development (OECD)

**RPMASA Responsible Packaging Management Association of South Africa

A review of ammonium nitrate regulations and best practices in Canada (cont'd)

Conclusion

- The overall risk related to the transportation of ammonium nitrate within Canada appears to be low.
- There are still opportunities to further clarify the Canadian regulatory framework.

As such, it is recommended that TC:

**Enhance regulatory clarity
&
Maintain international
harmonization**



- ☐ Examine the *Ammonium Nitrate Storage Facilities Regulations* as part of a broader comparative review of bulk storage regulations under the *Rail Safety Act* to address safety gaps.
- ☐ Maintain alignment with international codes for:
 - TDGR; and
 - *Cargo, Fumigation and Tackle Regulations*.

**Continue raising
awareness**



- ☐ Collaborate with industry & provinces/territories to bring more awareness to the safety aspects related to ammonium nitrate activities.

CAN/CGSB 43.151 Explosives Packaging standard committee



Government
of Canada

Canadian General
Standards Board

Gouvernement
du Canada

Office des normes
générales du Canada

CAN/CGSB-43.151-2019

Supersedes CGSB-43.151-2012



Packaging, handling, offering for transport and transport of Explosives (Class 1)

Canadian General Standards Board **CGSB**



Standards Council of Canada
Conseil canadien des normes

CAN/CGSB 43.151

Standard development



CAN/CGSB 43.151 (cont'd)

Summary of changes

- ✓ Aligned requirements with the 22nd edition of the UN Recommendations.
- ✓ Updated packing instruction EP101 (Competent Authority Approval), CEP 01 (perforating guns) and CEP 02 (bulk).
- ✓ Updated references to other DGs packaging standards.
- ✓ Added requirements on the reuse of packagings and use of partially filled packagings to transport Class 1 Explosives.
- ✓ Updated decontamination requirements.
- ✓ Added provision to prohibit the use of lightweight Intermediate Bulk Container (IBC) for the transport of Class 1 Explosives.

Serge Dionne is the lead on the CGSB-43.151 standard development.
For any question: TDGMOC-TMDContentants@tc.gc.ca.

UN3375 - Equivalency Certificate

SH 13715 Update



Transport
Canada

Transports
Canada



Transportation of Dangerous
Goods Directorate
L'Esplanade Laurier
300 Laurier Avenue West
Ottawa, Ontario
K1A 0N5

Direction générale du transport
des marchandises dangereuses
L'Esplanade Laurier
300, avenue Laurier Ouest
Ottawa (Ontario)
K1A 0N5



Equivalency Certificate

(Approval issued by the competent authority of Canada)

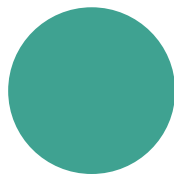
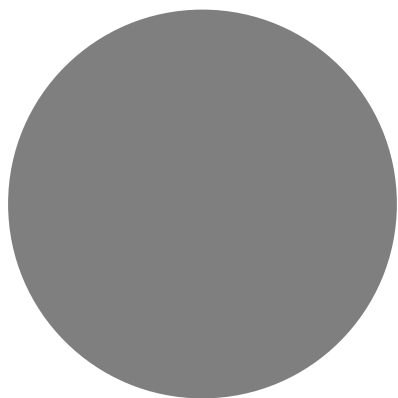
Certificate Number:	SH 13715 (Ren. 1)
Template Number:	N/A
Certificate Holder:	Canadian Explosives Industry Association (CEAEC)
Mode of Transport:	Road
Effective Date:	May 4, 2023
Expiry Date:	November 30, 2025

UN3375 / Equivalency Certificate 13715 Update

- The equivalency certificate was originally issued on October 28, 2022.
- The certificate was updated on May 4, 2023, to clarify that the 20,000 kg limit of section 9.5 TDGR doesn't apply.
- Despite the equivalency certificate allowing ammonium nitrate emulsions (ANEs) to be classified as **UN3375, Class 5.1 (Oxidizing substance)**, NRCan still considers ANEs as explosives.

Are there any suggested changes or fixes to the existing equivalency certificate (SH 13715)?





Sustainable Practices in Explosives Packaging Research Project

Sustainable Practices in Explosives Packaging Research Project

Project goals:

- Determine if there are more sustainable practices for explosives packaging, while maintaining adequate level of safety; and
- Assess if there are barriers to environmental sustainability in current TDG and NRCan regulatory requirements for explosives packaging.

Two (2) primary project tasks

1. Determine current lifecycle and quantities of explosives packagings used in Canada (IBCs, boxes, bags), including disposal practices:
 - Survey of producers, users, and disposal facilities.
2. Regulatory scan and best practices:
 - Summarize regulatory barriers to the disposal, re-use, or recycling of explosives packaging; and
 - Summarize industry restrictions, roadblocks, and best practices in the disposal of explosives packaging.

TDG has retained *Cheminfo Services Inc.* and *DAMet Services Ltd.* to complete this project. Contact David Cotsman David.Cotsman@tc.gc.ca for more info.

Final report expected to be received by TC in September 2023.

THANK YOU FOR YOUR TIME!



What we learned



Ammonium Nitrate Risk Assessment

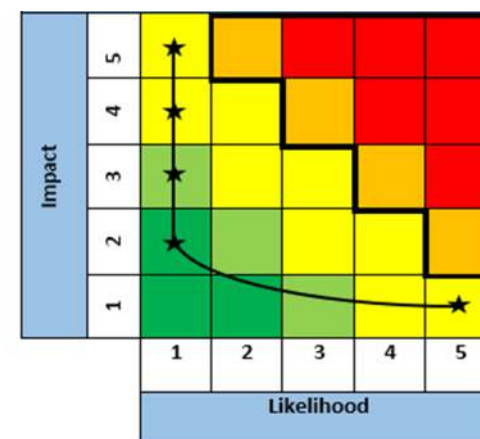
The objective was to measure the level of risk of incidents involving Ammonium Nitrate.

The Assessment examined the source of the risk, the likelihood and impact of incidents, and the efficacy of existing regulations through data analysis and stakeholder consultations.

Findings

- ✓ **The transportation of ammonium nitrate has increased in recent years**, but this increase is seen primarily in rail and marine, which have fewer incidents than road.
- ✓ **Incidents are trending down and have generally been low impact**, with no indication that this will be reversed in the near future.
- ✓ **There is no indication that the existing treatments and regulations are being undermined** by systematic non-compliance.

Risk curve of incidents involving Ammonium Nitrate



The overall risk of incidents regarding the transportation of Ammonium Nitrate appears to be low and within tolerable parameters.

What we heard



Fertilizer Canada Ammonium Nitrate Forum

Multiple Jurisdictions

Confusion regarding regulatory requirements due to multi-jurisdictional approach.



International Best Practices

The current regulatory frameworks should be further enhanced by leveraging international best practices.



TC Regulations

Safety gaps related to *Ammonium Nitrate Bulk Storage Facilities Regulations* under *Rail Safety Act, 1985*.



Findings

Issues

- Difficulty in finding the required provisions in a series of acts, regulations, and bylaws at all levels of government.

- Industry may be following guidelines based on older best practices requirements for the storage of ammonium nitrate-based fertilizer.

- Lack of clarity on prescribed separation distances and maximum amounts permitted for storage.
- Classification & identification differ from TDGR and International Model and Codes.