



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:** SU 10847 (Ren. 3)  
**Template Number:** N/A  
**Certificate Holder:** Amtrol Inc.  
**Mode of Transport:** Road, Rail, Marine  
**Effective Date:** May 1, 2023  
**Expiry Date:** April 30, 2028

### LEGEND

For this equivalency certificate, documents referred to by an abbreviation have the following meaning:

***TDG Act:*** *Transportation of Dangerous Goods Act, 1992*

***TDG Regulations:*** *Transportation of Dangerous Goods Regulations*

### NOTES

**Note 1:** Subsection 31(4) of the *TDG Act* stipulates that any non-compliance with the conditions of this equivalency certificate will result in the provisions of the *TDG Act* and *TDG Regulations* to apply as though this equivalency certificate did not exist.

**Note 2:** This equivalency certificate provides no regulatory relief other than specifically stated herein. Therefore, all other requirements of the *TDG Act* and the *TDG Regulations* apply.

**PURPOSE**

*(The following is for information purposes only and is not part of the certificate.)*

This equivalency certificate authorizes the transport of pre-pressurized diaphragm-type tanks used in water storage applications. The dangerous goods are a permanent component of the means of containment. The means of containment are for single-trip shipment through the distribution chain to the point of use (installation sites). An equivalent level of safety is provided by requiring that the means of containment be designed with a significant safety margin against burst when used in the service specified herein.

**Part A** of this equivalency certificate authorizes steel tanks, whereas **Part B** authorizes composite tanks.

This equivalency certificate will be revoked once the *TDG Regulations* are amended to incorporate these conditions as part of an exemption for water pump systems tanks.

**CONDITIONS**

**Part A – Steel Tanks**

This equivalency certificate authorizes **AMTROL INC.** to handle, offer for transport, transport, or import, and authorizes **any person** to handle, offer for transport, transport, or import, on behalf of the certificate holder, by road or railway vehicle, or by vessel in Canada, dangerous goods that are:

<b>UN Number</b>	<b>Shipping Name and Description</b>	<b>Class</b>	<b>Packing Group</b>
UN1002	AIR, COMPRESSED, with not more than 23.5 per cent oxygen, by volume	2.2	N/A
UN1066	NITROGEN, COMPRESSED	2.2	N/A
UN1046	HELIUM, COMPRESSED	2.2	N/A

in a manner that does not comply with:

- Part 3 (Documentation) of the *TDG Regulations*,
- Part 4 (Dangerous Goods Safety Marks) of the *TDG Regulations*,
- sections 5.1.1 and 5.2 of the *TDG Regulations*,
- subparagraphs 5.10(1)(a)(ii), 5.10(1)(b)(iii) and 5.10(1)(d)(iii) of the *TDG Regulations*,
- subsection 5.10(2) of the *TDG Regulations*,
- Part 6 (Training) of the *TDG Regulations*, and
- Part 8 (Reporting Requirements) of the *TDG Regulations*,

if the following conditions are met:

- a) The dangerous goods are contained in, and are not intended to be discharged from, a means of containment that is designed for use in water pump systems;
- b) After filling, each means of containment is subjected to a leak-test;
- c) The internal pressure in each means of containment at 20°C when filled for transport with the gas is less than or equal to 345 kPa;
- d) Each means of containment is packed in a strong outer packaging during transport;

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- e) Subject to conditions (f) to (p) of this certificate, each means of containment was designed, manufactured, tested, and marked in accordance with the requirements of ANSI/WSC PST 2000-2016 Standard, "*Standard Pressurized Water Storage Tank*", published by the Water Systems Council in February 2016;
- f) Each means of containment was manufactured by the certificate holder at 1400 Division Road, West Warwick, RI, U.S.A., in accordance with Amtrol Inc.'s design calculations and models on file with the Executive Director, Regulatory Frameworks and International Engagement, Regulatory Affairs Branch, Transportation of Dangerous Goods Directorate, Transport Canada;
- g) The means of containment were manufactured under a quality management system in accordance with International Standard ISO 9001:2008, "*Quality management Systems - Requirements*", published by the International Organization for Standardization, registered with a quality management system registrar (registration organization) accredited by the Standards Council of Canada (SCC), or a foreign quality management system registrar recognized by the SCC;
- h) The means of containment are welded carbon steel containers with heads concave to pressure;
- i) The means of containment have a maximum outside diameter of 660.4 mm, and a maximum water capacity of 450 L;
- j) The materials of construction for the shells and the ends (heads) comply with the requirements of ASTM Standard A1008/A1008M, 2016, "*Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable*", published by ASTM International (American Society for Testing and Materials);
- k) Materials of shells and ends of finished means of containment are identified by a suitable method during manufacture to provide traceability of the metal to its heat number;
- l) Subject to condition (m) of this certificate, the wall stress at a pressure equal to three times the filling pressure at 20°C does not exceed 138 MPa using the following formula:

$$S = Pd/2t$$

Where S = wall stress in MPa;

P = pressure equal to three times the filling pressure at 20°C in MPa;

d = inside diameter of the means of containment in mm;

t = minimum wall thickness of the means of containment in mm;

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- m) For means of containment with an inside diameter greater than 265 mm, the wall stress calculated in accordance with condition (l) of this certificate does not exceed 172 MPa;
- n) Subject to condition (o) of this certificate, the minimum design burst pressure is at least 6 times the filling pressure at 20°C;
- o) For means of containment with an inside diameter greater than 265 mm, the minimum design burst pressure is at least 8 times the filling pressure at 20°C;
- p) Each means of containment was subjected to a pneumatic pressure test for at least 30 s at a minimum pressure of at least 1.0 MPa and showed no leaks or other defects; and
- q) When the gross mass of dangerous goods offered for transport by one consignor to one destination is greater than 500 kg, Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), except sections 4.10, 4.11 and 4.12, Part 6 (Training) and Part 8 (Reporting Requirements) of the *TDG Regulations* apply.

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**Part B – Composite Tanks**

This equivalency certificate authorizes **AMTROL INC.** to handle, offer for transport, transport, or import, and authorizes **any person** to handle, offer for transport, transport, or import, on behalf of the certificate holder, by road or railway vehicle, or by vessel in Canada, dangerous goods that are:

<b>UN Number</b>	<b>Shipping Name and Description</b>	<b>Class</b>	<b>Packing Group</b>
UN1002	AIR, COMPRESSED, with not more than 23.5 per cent oxygen, by volume	2.2	N/A
UN1066	NITROGEN, COMPRESSED	2.2	N/A
UN1046	HELIUM, COMPRESSED	2.2	N/A

in a manner that does not comply with:

- Part 3 (Documentation) of the *TDG Regulations*,
- Part 4 (Dangerous Goods Safety Marks) of the *TDG Regulations*,
- sections 5.1.1 and 5.2 of the *TDG Regulations*,
- subparagraphs 5.10(1)(a)(ii), 5.10(1)(b)(iii) and 5.10(1)(d)(iii) of the *TDG Regulations*,
- subsection 5.10(2) of the *TDG Regulations*,
- Part 6 (Training) of the *TDG Regulations*, and
- Part 8 (Reporting Requirements) of the *TDG Regulations*,

if the following conditions are met:

- a) The dangerous goods are contained in, and are not intended to be discharged from, a small means of containment that is designed for use in water pump systems;
- b) The means of containment is designed, manufactured, tested and marked in accordance with ANSI/WSC PST;
- c) The means of containment is 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;
- d) The means of containment is made of composite material, has ends concave to pressure and has a maximum outside diameter of 660.4 mm;

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- e) The internal pressure in the small means of containment when filled for transport with the dangerous goods is less than or equal to 280 kPa at 20°C;
- f) The small means of containment is packed in a strong outer packaging;
- g) When the gross mass of dangerous goods offered for transport by one consignor to one destination is greater than 500 kg, Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), except sections 4.10, 4.11 and 4.12, Part 6 (Training) and Part 8 (Reporting Requirements) of the *TDG Regulations* apply.

Signature of Issuing Authority

*David Lamarche, P. Eng., ing.*

David Lamarche, P. Eng., ing.  
Manager, Approvals and Special Regulatory Projects

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*(The following is for information purposes only and is not part of the certificate.)*

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**Legend for Certificate Number**

SH - Road, SR - Rail, SA - Air, SM - Marine  
SU - More than one Mode of Transport  
Ren - Renewal

**For more information:**

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