



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 No.:** SU 4366 (Ren. 4)

**Template Number:** N/A

**Certificate Holder:** Certified Cylinder Services Inc.

**Mode of Transport:** Road, Rail, Air, Marine

**Issue Date:** June 21, 2021

**Expiry Date:** June 30, 2026

### LEGEND

For the purposes of 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*

***CSA B339:*** *CSA Standard B339, "Cylinders, spheres, and tubes for the transportation of dangerous goods", published by the Canadian Standards Association (CSA), as amended from time to time*

***CSA B340:*** *CSA Standard B340, "Selection and use of cylinders, spheres, tubes, and other containers for the transportation of dangerous goods, Class 2", published by the Canadian Standards Association (CSA), as amended from time to time*

### 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

This equivalency certificate authorizes the continued use of cylinders, which were manufactured, prior to February 27, 2010, by **TW Cylinders LLC** in accordance with the conditions of Permit for Equivalent Level of Safety **SU 4366**. **TW Cylinders LLC** ceased all production of cylinders manufactured in accordance with permit **SU 4366**, but an equivalency certificate is still required to allow these cylinders to be used in Canada.

Appendix A contains the last copy of the permit **SU 4366** that was issued to **TW Cylinders LLC** authorizing them to manufacture cylinders that did not comply with *CSA B339* at the time of manufacture.

### CONDITIONS

This equivalency certificate authorizes **Certified Cylinder Services Inc.**, to handle, offer for transport or transport in Canada, and authorizes **any person** to handle, offer for transport, transport, or import into Canada, by road or railway vehicle, by aircraft or by vessel, cylinders in a manner that does not comply with:

- sections 5.1.1 and 5.2 of the *TDG Regulations*,
- subparagraphs 5.10(1)(a)(ii), 5.10(1)(b)(iii), 5.10(1)(c)(ii) and 5.10(1)(d)(iii) of the *TDG Regulations*, and
- subsection 5.10(2) of the *TDG Regulations*,

if the following conditions are met:

#### 1) Selection and Use

- a) Subject to condition 1)b) of this certificate, the requirements for specification TC-3TM tubes in *CSA B340*, are complied with;
- b) The cylinders do not contain carbon monoxide, gases containing free hydrogen or sulphides, or any gas that would cause hydrogen embrittlement of the steel;

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- c) Subject to conditions 1)d) and 1)e) of this certificate, the cylinders were manufactured prior to February 27, 2010, in accordance with the conditions of Permit for Equivalent Level of Safety SU 4366 issued by the Transportation of Dangerous Goods Directorate, Transport Canada;
- d) The cylinders are manufactured in accordance with the specific procedures and with drawing No. 38643 (LT-360, Model No. 36050), drawing No. 38644 (LT-380, Model No. 38050), drawing No. 38645 (LT-440, Model No. 44050), all dated May 19, 1993, or drawing No. 38671-2 (Model No. 21330), dated August 27, 1993, and filed by Taylor-Wharton, Taylor-Wharton Gas Equipment Division, HARSCO Corporation with the Transportation of Dangerous Goods Directorate, Transport Canada on June 9, 1993 and September 11, 1995, respectively;
- e) The Transport Canada mark, the specification designation, and the service pressure marked on each cylinder are, “**TC-SU 4366-**” followed by the service pressure expressed in bar;

## 2) Requalification

- a) Cylinders due for requalification are requalified in accordance with the requirements applicable to specification TC-3TM set out in *CSA B339*;
- b) The certificate holder, cylinder owner or user reports any incidents involving loss of contents or failure of the cylinders to the Executive Director, Regulatory Frameworks and International Engagement, Regulatory Affairs Branch, Transportation of Dangerous Goods Directorate, Transport Canada.

Signature of Issuing Authority

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

David Lamarche, P. Eng., ing.

Chief, Approvals and Special Regulatory Projects

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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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## **Appendix A**

Appendix A contains the last copy of the Permit for Equivalent Level of Safety SU 4366 that was issued to TW Cylinders LLC authorizing them to manufacture cylinders that did not comply with CSA B339 at the time of manufacture.

**Permit for Equivalent Level of Safety**

**Permit No.:** SU 4366 (Ren. 3)  
**Permit Holder:** TW Cylinders LLC  
**Mode of Transport:** Road, Rail, Air, Marine  
**Issue Date:** June 30, 2008  
**Expiry Date:** June 30, 2013

**CONDITIONS**

This Permit for Equivalent Level of Safety authorizes TW Cylinders LLC to sell, offer for sale, distribute, or deliver in Canada and authorizes any person to handle, offer for transport, transport, or import into Canada, by road or railway vehicle, by aircraft or by ship, cylinders in a manner that does not comply with sections 5.1 and 5.2, subparagraphs 5.10(1)(a)(i) and 5.10(1)(b)(i), paragraph 5.10(1)(c), subparagraph 5.10(1)(d)(i), and subsection 5.10(2) of the *Transportation of Dangerous Goods Regulations*, if:

**Selection and Use**

- (a) subject to paragraph (b), the requirements with respect to specification TC-3TM tubes in National Standard of Canada CAN/CSA-B340-02, *Selection and Use of Cylinders, Spheres, Tubes, and Other Containers for the Transportation of Dangerous Goods, Class 2*, dated October 2002 as amended January 2004 and February 2005, are complied with;
- (b) the cylinders do not contain carbon monoxide, gases containing free hydrogen or sulphides, or any gas that would cause hydrogen embrittlement of the steel;

**Manufacture**

- (c) the cylinders are manufactured in accordance with the specific procedures and with drawing No. 38643 (LT-360, Model No. 36050), drawing No. 38644 (LT-380, Model No. 38050), drawing No. 38645 (LT-440, Model No. 44050), all dated May 19, 1993, or drawing No. 38671-2 (Model No. 21330), dated August 27, 1993, and filed by Taylor-Wharton, Taylor-Wharton Gas Equipment Division, HARSCO Corporation with the Transport Dangerous Goods Directorate, Transport Canada on June 9, 1993 and September 11, 1995, respectively;
- (d) subject to paragraphs (e) to (p), the cylinders are in compliance with the requirements applicable to specification TC-3TM in National Standard of Canada CAN/CSA-B339-02, *Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods*, dated October 2002 as amended in November 2003 and February 2005, cited in the rest of the permit as CAN/CSA-B339-02;

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- (e) cylinder bottoms are convex to pressure;
- (f) the water capacity of each cylinder does not exceed 55 L;
- (g) the steel chemical composition is as follows:

<u>Element</u>	<u>Mass Percent</u>	PRODUCT ANALYSIS TOLERANCES (%)	
		<u>Under</u> <u>Minimum</u>	<u>Over</u> <u>Maximum</u>
Carbon	0.32 to 0.38	0.03	0.04
Manganese	0.60 to 1.05	0.04	0.04
Phosphorus	0.015 maximum	--	0.01
Sulphur	0.010 maximum	--	0.001
Silicon	0.15 to 0.35	0.02	0.03
Chromium	0.80 to 1.15	0.05	0.05
Molybdenum	0.15 to 0.25	0.02	0.02

Incidental elements are within limits consistent with accepted steel-making practices;

- (h) the cylinder shells are manufactured by the backward extrusion method;
- (i) the cylinder bottoms have a minimum thickness not less than two times the minimum design wall thickness when measured within an area bounded by a line representing the points of contact between the cylinder and floor when the cylinder is in a vertical position;
- (j) the minimum design wall thickness is 5.6 mm for the LT-360 cylinder, 5.9 mm for the LT-380 cylinder, 5.7 mm for the LT-440 cylinder, or 5.4 mm for cylinder Model No. 21330;
- (k) clause 4.2.2 of CAN/CSA-B339-02 does not apply;
- (l) after all shell forming operations and prior to closing-in, in addition to the inspection by an Inspector:
  - (i) each cylinder is visually inspected for internal and external imperfections that are cause for rejection in accordance with CGA Publication C-6-2007, Standards for Visual Inspection of Steel Compressed Gas Cylinders, published by the Compressed Gas Association, Inc., dated 2007, and
  - (ii) the wall thickness of the cylindrical section of each shell is verified by X-ray thickness gauging;
- (m) the required tensile test and impact test specimens are cut from cylinders only;

- (n) tensile tests are performed on specimens cut from 1 cylinder taken at random from each lot of 200 cylinders or less of one heat;
- (o) the Transport Canada mark, the specification designation, and the service pressure marked on each cylinder are:

**TC-SU 4366**

followed by the service pressure expressed in bar; and

- (p) the permit holder reports once per calendar year, a summary of the cylinder manufacturing and performance experience to the Director, Regulatory Affairs Branch, Transport Dangerous Goods Directorate, Transport Canada.

This Permit for Equivalent Level of Safety serves as the registration of TW Cylinders LLC, pursuant to clause 25.2 of CAN/CSA-B339-02, to manufacture cylinders of the designs specified herein. TW Cylinders LLC's registered mark pursuant to CAN/CSA-B339-02, is:



**Explanatory Note**

This Permit for Equivalent Level of Safety authorizes the manufacture and the use of cylinders under the conditions stipulated herein. The applicant demonstrated that by restricting certain design parameters as well as the types of gases that could be contained, a cylinder of reduced wall thickness could be manufactured with equivalent safety.