

Certificate

CDN/E201/-96 (Rev. 4)

Endorsement of Transport Package Design

No. **USA/0592/H(M)-96 (Rev. 4)**

The transport package design identified below is certified by the Canadian Nuclear Safety Commission pursuant to paragraph 21(1)(h) of the *Nuclear Safety and Control Act* and Subsection 10(1) of the *Packaging and Transport of Nuclear Substances Regulations*, 2015 and to the IAEA's *Regulations for the Safe Transport of Radioactive Material*, 2012 Edition.

REGISTRATION OF USE OF PACKAGES

All users of this authorization shall register their identity in writing with the Canadian Nuclear Safety Commission prior to the first use of this authorization and shall certify that they possess the instructions necessary for preparation of the package for shipment.

PACKAGE IDENTIFICATION

Designer: **Cameco Corporation**

Make/Model: **48X, 48Y Cylinders**

Mode of Transport: **Sea, Road, Rail**

IDENTIFICATION MARK

The package shall bear the competent authority identification mark "**USA/0592/H(M)-96**".

PACKAGE DESCRIPTION

The packages, as further described in Certificate No. USA/0592/H(M)-96 (Rev. 4), consist of a steel cylinder, 16 mm thick with semi-ellipsoidal ends and 3 stiffening rings. A 25.4 mm valve is fitted at one end and a plug is fitted at the other end. Each end is protected by a steel skirt extending from the cylinder shell. In addition, the valve is further protected by a valve protection assembly (VPA) made of aluminium alloy when the content exceeds the residual "heels" authorized. The VPA weighs approximately 11 kg.



The configuration of the 48X cylinder is as follows:

Shape:	Cylinder	Shielding:	n/a
Mass:	11580 kg	Outer Casing:	Steel
Length:	3016 mm	Height:	n/a
Width:	n/a	Diameter:	1220 mm

The configuration of the 48Y cylinder is as follows:

Shape:	Cylinder	Shielding:	n/a
Mass:	14860 kg	Outer Casing:	Steel
Length:	3804 mm	Height:	n/a
Width:	n/a	Diameter:	1220 mm

AUTHORIZED RADIOACTIVE CONTENTS

The packages are authorized to contain either:

- a minimum of 9000 kilograms and up to 62 percent of their certified volumetric capacity of solid (at 20°C) fissile excepted or non-fissile uranium hexafluoride, or
- not more than 22.7 kg of residual "heels" of fissile excepted or non-fissile uranium hexafluoride;

as further detailed in USA/0592/H(M)-96 (Rev. 4).

MANAGEMENT SYSTEM

The management system for the design, manufacture, testing, documentation, use, maintenance and inspection of the package shall be in accordance with:

- Foreign Certificate No. USA/0592/H(M)-96 (Rev. 4)
- Packaging and Transport of Nuclear Substances Regulations, 2015

SHIPMENT

The preparation for shipment of the package shall be in accordance with:

- Foreign Certificate No. USA/0592/H(M)-96 (Rev. 4)
- Packaging and Transport of Nuclear Substances Regulations, 2015

This certificate is valid only in Canada.

E. Lemoine
Designated Officer pursuant to paragraph 37(2)(a)
of the Nuclear Safety and Control Act



NOTES

Foreign Certificate No. USA/0592/H(M)-96 (Rev. 4) attached.

Revision 3: June 1, 2016. Certificate issued to incorporate Rev. 3 of foreign certificate.

Revision 4: May 26, 2021. Certificate issued to incorporate Rev. 4 of foreign certificate.





U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

East Building, PHH-23
1200 New Jersey Ave, SE
Washington, D.C. 20590

**COMPETENT AUTHORITY CERTIFICATION FOR A
NON-FISSILE OR FISSILE EXCEPTED
URANIUM HEXAFLUORIDE PACKAGE DESIGN
CERTIFICATE USA/0592/H(M)-96, REVISION 4**

The Competent Authority of the United States certifies that the radioactive material package design described in this certificate satisfies the regulatory requirements for a Type H(M) package for non fissile or fissile excepted quantities of uranium hexafluoride as prescribed in the regulations of the International Atomic Energy Agency¹ and the United States of America² The package design is approved for use within the United States for import and export shipments made in accordance with applicable international and domestic transport regulations.

1. Package Identification - Model 48X and 48Y cylinders.
2. Package Description - Cylinders must be designed, fabricated, inspected and marked in accordance with American National Standards Institute (ANSI) N14.1 standard in effect at the time of manufacture. Sample drawings of the cylinders are shown in Attachment 1.
3. Authorized Contents - The cylinders may contain solid (at 20°C), fissile excepted or non-fissile uranium hexafluoride up to 62% of their certified volumetric capacity or fissile excepted or non-fissile uranium hexafluoride residual (heels) quantities of not more than 22.7 Kg (50 lbs).
4. General Conditions -
 - a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.

¹ "Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

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- b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Engineering and Research, (PHH-23), Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.
 - c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.
 - d. Records of Management System activities required by Paragraph 306 of the IAEA regulations¹ shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.
5. Special Conditions -
- a. Cylinders must be handled and operated in accordance with the procedures and packaging criteria identified in United States Enrichment Corporation Report No. USEC-651 and the ANSI N14.1 standard in effect at the time of transport.
 - b. Cylinders containing greater than residual quantities of non-fissile or fissile excepted uranium hexafluoride must use the valve protector alternate described in ANSI N14.1-2019.
 - c. Each user of this certificate must periodically inspect, test, mark, repair, and modify cylinders in accordance with the ANSI N14.1 standard in effect at the time of the action.
6. Marking and Labeling - The package shall bear the marking USA/0592/H(M)-96 in addition to other required markings and labeling.
7. Expiration Date - This certificate expires on February 28, 2026. Previous editions which have not reached their expiration date may continue to be used.

CERTIFICATE USA/0592/H(M)-96, REVISION 4


This certificate is issued in accordance with paragraph(s) 805 of the IAEA Regulations and Section 173.477 of Title 49 of the Code of Federal Regulations, in response to the February 8, 2021 petition by Cameco, Port Hope, Ontario, and in consideration of other information on file in this Office.

Certified By:

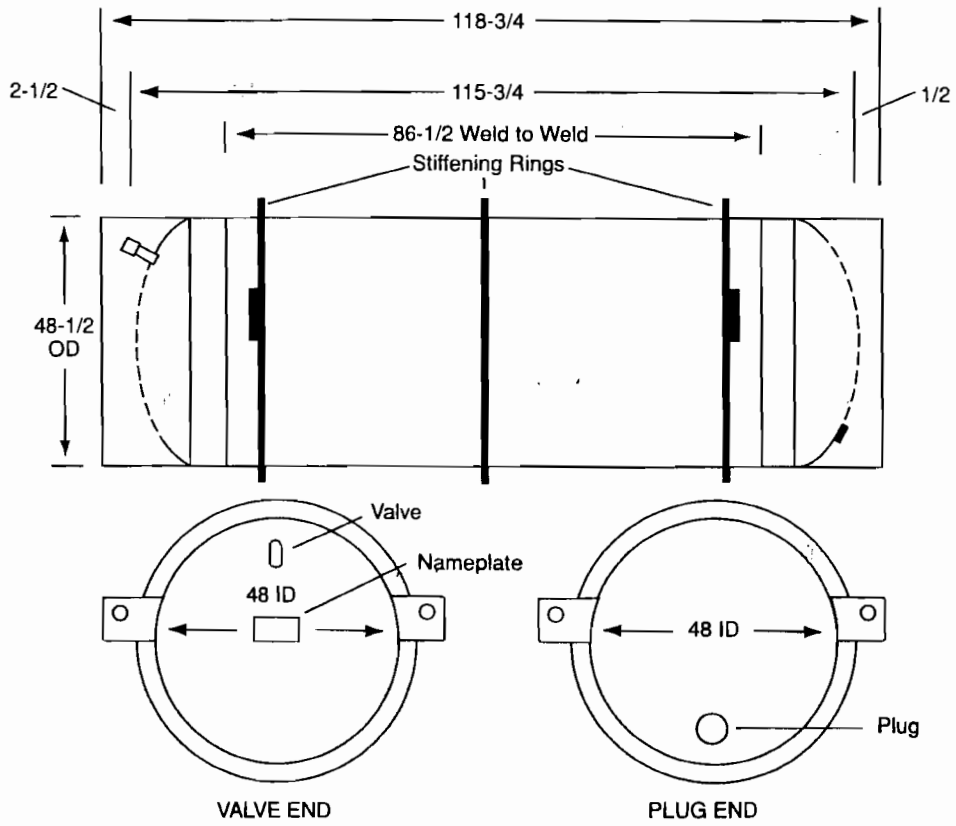


February 24, 2021

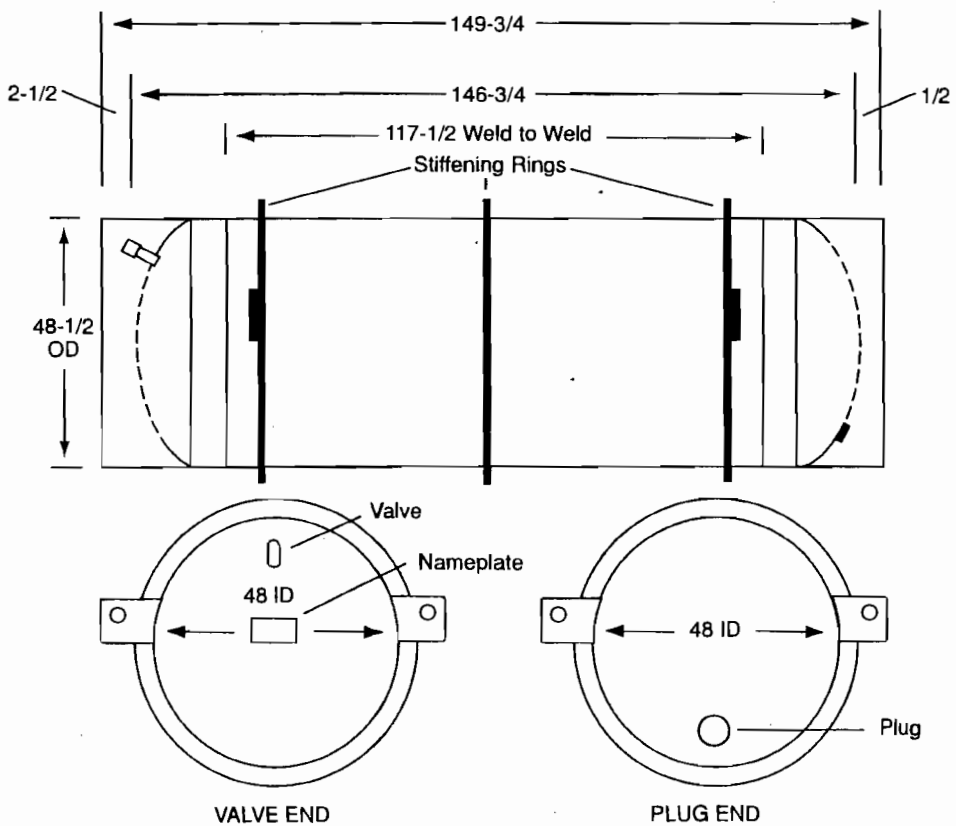
(DATE)

 William Schoonover
Associate Administrator for Hazardous
Materials Safety

Revision 4 - Issued to extend the expiration date.



Schematic of Cylinder Model 48X



Schematic of Cylinder Model 48Y



U.S. Department of
Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

East Building, PHH-23
1200 New Jersey Ave, SE
Washington, D.C. 20590

CERTIFICATE NUMBER: USA/0592/H(M)-96

ORIGINAL REGISTRANT(S) :

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