

Environics

Re: Environics USA, Inc. License # 19-23974-01E Renewal

Appendix 3-Canadian Licenses

1308 Continental Drive, Suite J
Abingdon, MD 21009, USA
Telephone: (410) 612-1250 Telefax: (410) 612-1251



Canadian Nuclear Safety Commission Commission canadienne de sûreté nucléaire

P.O. Box 1046, Station B
Ottawa, Ontario
K1P 5S9

C.P. 1046, Succursale B
Ottawa (Ontario)
K1P 5S9

Fax: (613) 995-5086

Télécopieur : (613) 995-5086

Your file Votre référence

Directorate of Nuclear
Substance Regulation

Our file Notre référence

Telephone: 1-888-229-2672

28-185-0001

August 15, 2011

Mr. Rolf Meinholtz
Environics USA
1308 Continental Drive, Suite
Abingdon, Maryland 21009
United States of America

Subject: Radiation Device Certificate # R-185-0001-1-2017

Dear Mr. Meinholtz:

Please find enclosed a copy of the above certificate issued pursuant to the *Nuclear Safety and Control Act* for the following Radiation Device:

Environics ChemPro 100, ChemPro 100i, ChemPro FX and ChemPro PD Detectors

You are requested to verify the accuracy of the information contained in the certificate and to immediately inform the CNSC of any omissions or discrepancies.

The radiation device has been certified on the basis of the information submitted pursuant to section 12 of the *Nuclear Substances and Radiation Devices Regulations* and identified on the certificate. Any change in the design of your equipment may necessitate a new certification.

This radiation device may be decertified at any time pursuant to paragraphs 21(1)(h) and 37(2)(a) of the *Nuclear Safety and Control Act*, subject to the provisions of sections 14 and 15 of the *Nuclear Substances and Radiation Devices Regulations*.

If you have any questions or require clarification on CNSC regulatory requirements for certification, licensing or transportation, please do not hesitate to contact the undersigned at the address above.

Yours sincerely,

Karine Glenn
Transport Specialist
Directorate of Nuclear Substance Regulation

Enclosure(s)

**for
Radiation Device**

Certificate Number R-185-0001-1-2017	Date of Issue August 15, 2011	Date of Expiry November 30, 2017
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The radiation device identified below is certified by the Canadian Nuclear Safety Commission pursuant to paragraph 21(1)(h) of the *Nuclear Safety and Control Act* and section 12 of the *Nuclear Substances and Radiation Devices Regulations*.

Manufacturer: Environics Oy

Make and Model: Environics ChemPro 100, ChemPro 100i, ChemPro FX and ChemPro PD Detectors

Device Type: ELECTRON CAPTURE DETECTOR

Description: Reference CNSC Application Nos. 33607, 41828 and 44156.

The ChemPro line of radiation devices consists of chemical detection devices using ion mobility spectrometry technology. They are designed for harsh environment of military or civilian operations. The ChemPro 100, 100i and PD are portable devices which can be installed in a static mount. The ChemPro FX is the fixed site adaptation of the ChemPro 100 technology.

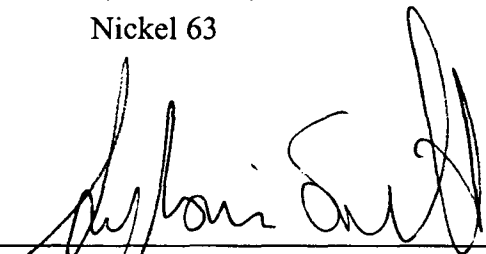
There is no shutter or source locking mechanism in any of the ChemPro line device models. The source is contained within a source box, which is in turn placed in the sensor unit installed within the instrument casing. The sensor unit is 4.6 cm long, 2.2 cm wide and 1.22 cm high and is the same in all models. Shielding is provided by lead blocks.

Each device incorporates one source foil, which can be either up to 5.92 MBq of Am-241 or up to 370 MBq of Ni-63. The source foil is 17.3 mm long x 10.0 mm wide x 0.25 mm high (Am-241) or 20 mm x 10 mm x 0.05 mm (Ni-63). The Am-241 source meets ANSI 77C22222 classification. The Ni-63 source meets ANSI 77C4X212 classification.

Refer to Summary Evaluation (CNSC Document No. 3772749) for additional information.

The radiation device may contain any of the following nuclear substances in a quantity not exceeding the corresponding quantity indicated:

Nuclear Substance	Maximum Quantity
Americium 241	5.92 MBq
Nickel 63	370 MBq


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

Summary Evaluation

For certificate no. R-185-0001

(Not part of the certificate but to be provided with certificate)

1. Identification of Radiation Device

Device Type: Analyzer
Manufacturer: Environics
Model(s): ChemPro 100, ChemPro 100i, ChemPro PD, ChemPro FX

2. Device Description

The ChemPro line of radiation devices consists of chemical detection devices using open loop ion mobility spectrometry technology. Four models are covered by this certificate: the ChemPro 100, ChemPro 100i, ChemPro PD and ChemPro FX.

There is no shutter or source locking mechanism in any of the ChemPro line device models. The source is contained within a source box, which is in turn placed in the sensor unit installed within the instrument casing. The sensor unit is 4.6 cm long, 2.2 cm wide and 1.22 cm high and is the same in all models. Shielding is provided by lead blocks. To prevent unintentional access to the source, the sensor unit is assembled using six Resistorx security button head screws.

Each device incorporates one source foil, which can be either Am-241 or Ni-63. The source foil is 17.3 mm long x 10.0 mm wide x 0.25 mm high (Am-241) or 20 mm x 10 mm x 0.05 mm. (Ni-63). These dimensions are greater than the 3.6 mm openings for the air path through the source. This precludes the possibility of the source foil being lost from the source box due to vibration or accident.

The Am-241 source meets ANSI 77C22222 classification. The Ni-63 source meets ANSI 77C4X212 classification.

3. General Arrangement

An illustration of the sensor unit is shown in Drawing #ED01031 [3]. Illustrations of the device models are also shown in Figures 1, 2 and 3.

4. Intended Use

The ChemPro line device models are designed for harsh environments of military or civilian operations to detect harmful gases and vapors. The ChemPro 100, 100i and PD are portable devices which can be installed in a static mount. The ChemPro FX is the fixed site adaptation of the ChemPro100 technology.

5. Authorized Nuclear Substances

This device is authorized to contain the following nuclear substance(s):

Nuclear Substance	Maximum Activity		Source Manufacturer	Special Form Certificate no.
	Source	Device		
Am-241	5.92 MBq	5.92 MBq	QSA Global	N/A
Am-241	5.92 MBq	5.92 MBq	NRD	N/A
Ni-63	370 MBq	370 MBq	Eckert & Ziegler	N/A

Note(s): Each device uses either Am-241 or Ni-63. There is only one source per device.

6. Maximum Expected Radiation Dose

Nuclear Substance	Activity (MBq)	Dose rate (uSv/h)		
		@ 5 cm	@ 25 cm	@ 100 cm
Am-241	5.92	0.35	<0.1	No measurable dose
Ni-63	370	No measurable dose	No measurable dose	No measurable dose

Note(s): These devices do not incorporate a shutter.

7. Conditions of Use and Storage

The device is designed for indoor and outdoor use and can operate in temperature ranges from -30°C to 55°C at a relative humidity ranging from 0 to 95% and storage temperature range from -40°C to 71°C. It can withstand corrosive environments, vibration and shock incidents expected to be encountered during storage, installation (for the ChemPro100 FX) and use

8. Leak Test

Periodic leak testing is not required to be performed for these devices.

9. Emergency and Accident Response

Emergency and accident response are to be dealt with in accordance with the emergency procedure provided in the *ChemPro 100 Operator and Unit Support Manual* [4], the *ChemPro FX User and Maintenance Manual* [5], and the *ChemPro PD Operator and Unit Support Manual* [6] and the *Nuclear Substances and Radiation Devices Regulations*.

10. Design, Testing and Manufacturing Quality Assurance

The radiation device is manufactured in accordance with an ISO 9001 compliant quality assurance system as detailed in the *EnviroNics OY Quality Plan for ACADS (RNLA) Project* [7].

11. Inspection, Maintenance and Servicing

The radiation device is to be inspected and maintained in accordance with the requirements set out in the *ChemPro 100 Operator and Unit Support Manual* [4], the *ChemPro FX User and Maintenance Manual* [5], and the *ChemPro PD Operator and Unit Support Manual* [6]. Servicing of the sensor unit by the user is not permitted.

12. Transport Packaging

The radiation device is placed in a plastic "Pelican" case for transport as an excepted package.

Note: When containing Ni-63, the radiation device is exempted from the *Packaging and Transport of Nuclear Substances Regulations* for transport in Canada following the sale to the end user.

13. Authorized Accessories and Configurations

There are no accessories for use with these devices that have an impact on radiological safety.

14. Reference Documents

No.	Document Description	Date of document	CNSC Document Number
1	Original application for certification of radiation device	2008-09-08	3285054
2	Amendment request for addition of Ni-63	2010-11-09	3634225
3	Sensor Unit Drawing (drawing #ED01031), Appendix B of original application	2008-09-08	3285054
4	<i>ChemPro 100 Operator and Unit Support Manual</i>	2011-05-12	3772134
5	<i>ChemPro FX User and Maintenance Manual</i>	2011-05-12	3772134
6	<i>ChemPro PD Operator and Unit Support Manual</i>	2011-05-12	3772134
7	<i>Environics OY Quality Plan for ACADS (RNLA) Project</i>	2008-09-08	3285054
8	Certification assessment	2011-08-10	3771301

15. Attachments



Figure 1: ChemPro 100 or 100i



Figure 2: ChemPro PD

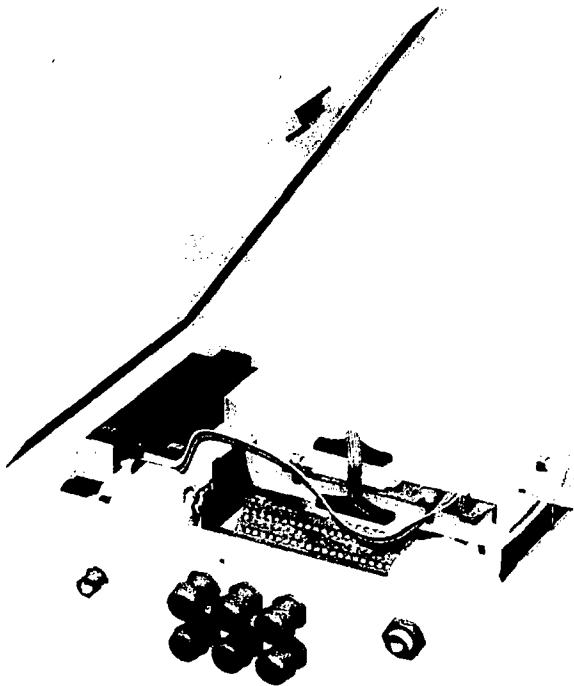


Figure 3: ChemPro FX