

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(Amended in its Entirety)

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DEVICE TYPE: Gas and Aerosol Detector

MODEL: ChemPro 100

DISTRIBUTOR: Environics USA, Inc.
737 Walker Road
Great Falls, VA 22066

Environics
4420 Eastport Parkway
Port Orange, FL 32127

MANUFACTURER: Environics Oy
Työmiehenkatu 2
50100 Mikkeli, Finland

SEALED SOURCE
MODEL DESIGNATION: Amersham: AMM
NRD: A-001

ISOTOPE: MAXIMUM ACTIVITY:
Americium-241 160 µCi (5.92 MBq)

LEAK TEST FREQUENCY: Not required

PRINCIPAL USE: (N) Ion Generator, Chromatography

CUSTOM DEVICE: _____ YES X NO

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DEVICE TYPE: Gas and Aerosol Detector

DESCRIPTION:

The ChemPro 100 is a chemical detector with the Sensor Unit using open loop ion mobility spectrometry technology and is manufactured in Finland by Environics Oy. The ChemPro 100 will be distributed in the United States to persons exempt from license by Environics USA, Inc. The ChemPro 100 is designed to detect harmful gases and vapors. Uses range from trained military and civilian personnel detecting chemical warfare agents to monitoring gas concentrations of the on-the-job hazardous toxic compounds. The Sensor Unit is designed such that the ionization chamber is integral part to the circuit card that has the associated electronics for generation of the signals used for detection of chemicals.

A Pump Unit draws sample air from the environment through the Sensor Unit which consists of a 160 μCi (5.92 MBq) Am-241 source, lead blocks, teflon cell block, teflon gaskets, six tamper resistance stainless steel screws, and boards made of fibreglass/epoxy resin composite.

The Sensor Unit is 4.6 cm (1.81") long, 2.1 cm (0.83") wide, and 1.19 cm (0.47") high and is installed in the ChemPro 100 with the heater and detector electrically connected to the analysis system. The source in the Sensor Unit has no on-off mechanism, and radiation levels are constant during both use and storage. Radiation level is calculated to be 1.9 $\mu\text{rem/hr}$ (0.019 $\mu\text{Sv/hr}$) at 5 cm (1.97") from the surface of ChemPro 100 case, which is secured with 4 screws and 4 tamper resistance stainless steel screws to prevent access to the inside of the device and the Sensor Unit.

The ChemPro 100 can be a portable or fixed device and weighs less than 2 lb. (0.9 kg) with battery pack and its overall dimension is 10.2 cm x 22.9 cm x 5.1 cm (4.01" x 9.02" x 2").

The manufacturer suggested a 10 year useful life for the ChemPro 100, which is labeled in accordance with 10 CFR 32.29(b).

DIAGRAM:

See Attachment 1.

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ATTACHMENT 1

