

REGISTRY OF SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDED IN ITS ENTIRETY)

NO: MA-1059-D-801-U
(Supercedes NR-136-D-126-U)

DATE: November 20, 2000

PAGE: 1 of 4

DEVICE TYPE: Variable X-Ray Source

MODEL: AMC 2084

MANUFACTURER/DISTRIBUTOR: Amersham Corporation
2636 S. Clearbrook Drive
Arlington Heights, IL 60005

ISOTOPE: Americium-241

MAXIMUM ACTIVITY: 10 millicuries

LEAK TEST FREQUENCY:

6 months

PRINCIPAL USE:

(U) X-ray Fluorescence

CUSTOM DEVICE:

YES NO

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DESCRIPTION:

The americium-241, as an oxide, is bound in a ceramic enamel and loaded into an annular stainless steel capsule. This primary capsule has dimensions of 12 mm O.D., 4 mm I.D. and 4 mm in height and a window thickness of 0.2 mm. A heavy alloy filling material is inserted inside the capsule. The capsule is then sealed by argon welding.

The primary capsule is mounted into a secondary assembly having dimensions of 37 mm O.D. by 32 mm in height. The design of this outer assembly is such that the primary capsule is an integral part of a top rotor which moves over 6 inactive target materials which produce the variable energy X-rays which pass through 4 mm (primary capsule) aperture. The central screw holding the rotor to main assembly is locked in place by a lead plug which prevents tampering.

LABELING:

The source is engraved with the serial number, nuclide, and activity.

DIAGRAM: See attachment 1..

CONDITIONS OF NORMAL USE:

The source is designed for educational and demonstration purposes. The source can also be used for the calibration of X-ray spectrometers.

PROTOTYPE TESTING:

The manufacturer states that the primary capsule has passed ANSI N5.10-1968 standard tests and has been classified as C4332

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EXTERNAL RADIATION LEVELS: No external radiation level data is available.

QUALITY ASSURANCE AND CONTROL: The source is no longer manufactured.

LIMITATIONS AND CONDITIONS OF USE:

- The device was distributed to persons specifically licensed by the NRC or an Agreement State.
- The distributor claims that approximately 300 were sold during the past 20 to 30 years.
- The distributor has committed to provide technical support and investigate problems that may arise from use of the device.
- Handling, storage, use, transfer, and disposal: to be determined by the licensing authority.
- This registration certificate and the information contained within the references shall not be changed or transferred with the written consent of the Commonwealth of Massachusetts, Radiation Control Program.

SAFETY ANALYSIS SUMMARY:

The model AMC 2084 is no longer distributed by AEA Technology QSA, Inc. but may be approved for licensing purposes. AEA Technology QSA, Inc. has indicated that it has distributed approximately 300 sources worldwide. AEA Technology QSA, Inc. has committed to continue to provide technical support for the model AMC 2684.

REFERENCES:

The following supporting documents for the model AMC 2084 device are hereby incorporated by reference and are made part of this registry document.

- NR-136-D-126-U dated December 6, 1972, with enclosures thereon.
- AEA Technology QSA, Inc.'s letter dated July 5, 2000.

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ISSUING AGENCY:

Massachusetts Department of Public Health, Radiation Control Program.

Date: 11/20/00

Reviewer: Agostino Savastano

Agostino Savastano

Date: 11/20/00

Reviewer: Robert Walker

Robert Walker

NATIONAL REGISTRY OF SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDED IN ITS ENTIRETY)

NO: MA-1059-S-136-S
(Supercedes NR-136-S-126-U)

DATE: November 20, 2000

ATTACHMENT 1 of 1

