

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES  
SAFETY EVALUATION OF SEALED SOURCE  
(CORRECTED COPY issued April 19, 1995)

NO: IL-136-S-846-S      DATE: August 11, 1977      PAGE: 1 of 3  
(previously IL-136-S-313-S, superseded by IL-136-S-312 and 314)

SOURCE TYPE:      Low Energy Photon Source

MODEL:      CTC.8502, CTC.8503, CTC 9504  
                 CTC.2, CTC.3, CTC.4

DISTRIBUTOR:      Amersham Corporation  
                         2636 South Clearbrook Drive  
                         Arlington Heights, IL 60005-4692

MANUFACTURER:      Amersham International Plc  
                         White Lion Road Amersham  
                         Buckinghamshire, England HP79LL

<u>ISOTOPE:</u>	<u>MAXIMUM ACTIVITY:</u>	
Cobalt-57	37 kBq	(1 millicurie) - CTC.8502, CTC.2
Cobalt-57	111 kBq	(3 millicuries) - CTC.8503, CTC.3
Cobalt-57	370 kBq	(10 millicuries) - CTC.8504, CTC.4

LEAK TEST FREQUENCY:      6 months

PRINCIPAL USE:      (I) Calibration Sources

CUSTOM SOURCE:      ☐ YES      ☒ NO

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SOURCE TYPE:      Low Energy Photon Source

DESCRIPTION:

Low energy photon source in an annular ring (CTC.850x or disc CTC.x) configuration with the cobalt electrodeposited on a metal backing and sealed in a welded stainless steel capsule.

PROTOTYPE TESTING:

Prototype source have been subjected to the test procedures as described in USASI N5-10, 1968 and have achieved a rating of C44322.

QUALITY CONTROL:

The sources are subjected wipe, bubble and immersion tests prior to distribution.

Each source is wiped on all external surfaces with a swab moistened with ethanol or water. The swab is then placed in a suitable scintillant mixture and checked for activity by scintillation counting. Activity of  $0.00005 \pm 0.000016$  microcurie can be detected. The leak test acceptance limit is established at 0.005 microcurie.

The source is immersed in a suitable liquid and the pressure in the vessel is reduced to 100 mm of mercury. No bubbles must be observed in order to pass.

The source is also immersed in water at 50° Centigrade for a minimum of four hours, and the activity of the water measured by liquid scintillation counting. This test has the same sensitivity and leak test acceptance limit as documented above.

The customer is provided with a certificate documenting the source content and the results of the leak tests.

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SOURCE TYPE:      Low Energy Photon Source

LIMITATIONS AND OTHER CONSIDERATIONS OF USE:

- These sources have been distributed only to persons specifically licensed by the Department, the Nuclear Regulatory Commission (NRC), an Agreement State, or a Licensing State.
- This source shall be leak tested at six-month intervals using techniques capable of detecting 0.005 microcuries of removable contamination.
- Handling, storage, use, transfer, and disposal: To be determined by the licensing authority.
- These sources shall not be subjected to environmental or other conditions of use which exceed USASI N5-10, 1968 classification C44322.
- This registration sheet and the information contained within the references shall not be changed without the written consent of the Department.

SAFETY ANALYSIS SUMMARY:

Since the effective date of this document, the Model CTC.8502, CTC.8503 and CTC.8504 and CTC.2, CTC.3 and CTC.4 sealed sources are no longer distributed by Amersham Corporation pursuant to this registry certificate. Distribution of similar sources is now covered by registry IL-136-S-312-S and IL-136-S-314-S, respectively, issued on August 11, 1977.

ISSUING AGENCY: Illinois Department of Nuclear Safety

DATE: 4/19/95

REVIEWED BY: Daren P. [Signature]

DATE: 4/19/95

CONCURRENCE: Joseph C. [Signature]