

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: TX-145-D-103-S DATE: December 17, 1982

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DEVICE TYPE: Detector Cell

MODEL: 2000

MANUFACTURER/DISTRIBUTOR: Antek Instruments, Inc.
6005 North Freeway
Houston, Texas 77022

SEALED SOURCE MODEL DESIGNATION: U.S. Radium Model LAB-508-1
New England Nuclear Model NER-002

ISOTOPE: H-3

MAXIMUM ACTIVITY: 250 mCi.
(2 foils of 125 mCi./cell)

LEAK TEST FREQUENCY: 6 months

PRINCIPAL USE: Ion generators, Chromatography

CUSTOM DEVICE: YES X NO

CUSTOM USER:

8403020018 840209
PDR FOIA
HAMMITT84-74 PDR

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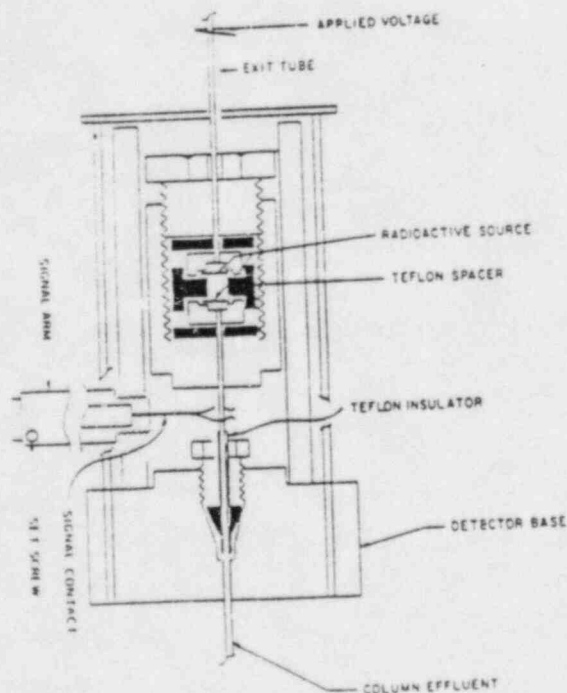
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DEVICE TYPE: Detector Cell

DESCRIPTION: The detector cell is a stainless steel cylinder. Two 125 millicurie tritium foils (plated on titanium foil), separated 1 millimeter by a teflon insulator, act as electrodes for the cell. These cells are designed to be used as helium ionization detectors and can be used as general purpose detectors for sensing gas chromatographic eluents. This cell is designed to be used in Antek Models 320, 320D, 3201 and 3202. Models 320 and 3201 will contain only one 250 mCi. cell. The model 320D and 3202 will contain 2 of the 250 mCi. cells.

LABELING: Each cell is identified by engraving an Antek serial number on the stainless steel container. A label showing the serial number, isotope, quantity and assay date is affixed to the exterior of the oven housing. The radiation trefoil and the words, "Caution Radioactive Material", are also on the label.

DIAGRAM:



The Model 2000 Detector Cell

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CONDITIONS OF NORMAL USE: The detector cell is designed to operate within a temperature range of 50° to 150°C at 0.2°C intervals. Normal use is analysis of high purity gases for contaminants.

PROTOTYPE TESTING: One prototype was made, tested and found to function within the parameters of other detector cells.

EXTERNAL RADIATION LEVELS: No external radiation levels are detectable since this is a pure low energy beta emitter.

QUALITY ASSURANCE AND CONTROL: Assembly is performed by Nuclear Sources and Services. It is then returned to Antek for sensitivity and performance tests. If performance is satisfactory, a locking pin is installed to prevent unauthorized entry into the cell.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE: The detector cell must be vented to the outside atmosphere. This can be done by venting the exhaust directly or through a hood system, back into the process stream, or operated in a large open plant environment.

REFERENCES: Based upon information contained in letters dated March 23, 1982 and April 9, 1982 and associated documents and drawings.

DATE: December 17, 1982

REVIEWED BY:

DATE: December 17, 1982

REVIEWED BY:

ISSUING AGENCY: Texas Department of Health