

U. S. ATOMIC ENERGY COMMISSION  
BYPRODUCT MATERIAL LICENSE

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

Licensee		
1. Name	Monsanto Chemical Company Organic Chemicals Division	3. License number 24-1113-9 (E64)
2. Address	1700 South Second Street St. Louis 77, Missouri	4. Expiration date May 31, 1964
		5. Reference No.
6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
A. Hydrogen 3  (See page 2)	A. Titanium tritide foil (Radiation Research Corp. Model TS-1)	A. 500 millicuries (2 source not to exceed 250 milli- curies each)
9. Authorized use		
A. To be used in a Barber Coleman ionization detector as part of a Model 61-C gas chromatograph or a Wilkens Instruments & Research, Inc., electron capture detector for analytical research.		
B. To be used in a Barber Coleman ionization detector as part of a Model 61-C gas chromatograph.		

## CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
15. The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards For Protection Against Radiation".
19. Byproduct material shall be used by, or under the supervision of, E. M. Emery.
25. The licensee shall not open or remove sealed sources containing byproduct material from their respective source holders.
43. Except as specifically provided otherwise by this license, the licensee shall possess and use byproduct material described in Items 6, 7 and 8 of this license in accordance with statements, representations and procedures contained in application dated April 30, 1962.

(See Page 2)

U. S. ATOMIC ENERGY COMMISSION  
BYPRODUCT MATERIAL LICENSE  
Supplementary Sheet

Page 2 of 3 Pages

License Number 24-1113-9  
(E64)

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
B. Strontium 90	B. Sealed source (U. S. Radium Corp. Model LAB-369)	B. 25 millicuries

CONDITIONS

31. A. Each sealed source containing byproduct material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made six months prior to the transfer, the sealed source shall not be put into use until tested.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of removable contamination on the source. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five days of the test with the Director, Division of Licensing and Regulation, U. S. Atomic Energy Commission, Washington 25, D. C., describing the equipment involved, the test results and the corrective action taken. A copy of such report shall also be sent to the Director of the appropriate Regional Office, Division of Compliance, U. S. Atomic Energy Commission:

Region I, Division of Compliance, USAEC, 376 Hudson Street,  
New York 14, New York

Region II, Division of Compliance, USAEC, 50 Seventh Street,  
Northeast, Atlanta 23, Georgia

(See page 3)

U. S. ATOMIC ENERGY COMMISSION  
BYPRODUCT MATERIAL LICENSE  
Supplementary Sheet

Page 3 of 3 Pages

License Number 24-1113-9  
(E64)

31. Continued:

Region III, Division of Compliance, USAEC, 9800 South Cass Avenue, Argonne, Illinois

Region IV, Division of Compliance, USAEC, P. O. Box 15266, Denver 15, Colorado

Region V, Division of Compliance, USAEC, 2111 Bancroft Way, Berkeley 4, California

- D. Tests for leakage and/or contamination shall be performed by the licensee in accordance with "Wipe Test Instructions for Strontium 90 Ionization Detectors" submitted with R. E. Johnson's letter dated April 20, 1959, or by other persons specifically authorized by the Commission to perform such services.

Date MAY 31 1962

For the U. S. Atomic Energy Commission  
Original Signed by  
Robert E. Brinkman  
by Isotopes Branch  
Division of Licensing and Regulation  
Washington 25, D. C.

(12-62)

Date Received MAY 1 1962	Expiration Date May 31, 1964	Issue Date	Tech. Review 286-
Control No. 43-22	Reference No.	License No. 24-1113-9 364	Amendment No. None
Isotope	Form	Possession Limit	
A. H-3	A. Titanium tritide foil (Radiation Research Corp. model TS-1)	A. 500 mc (2 years not to exceed 250 mc each)	
B. Sr-90	B. SS (U.S. Radium Corp. model LAB 369)	B. 25 mc	
C.	C.	C.	
D.	D.	D.	
E.	E.	E.	
F.	F. (over ltr)	F.	
G.	G.	G.	
H.	H.	H.	

## Authorized Use

- A. To be used in a Barber Coleman ionization detector, or a Wilkins Instrument & Research, Inc. Electron Capture detector for analytical research.
- B. To be used in a Barber Coleman ionization detector as part of a Model 61-C gas Chromatograph

REMARKS: Letters, Phone calls, Visits, Exemptions, Etc. (Use reverse side if necessary)

15.

19. E. M. Emery

25.

31.

D. By license in accordance with "Wife that Instructions for Sr-90 Ionization Detector" submitted with R.E. Johnson's ltr. dated April 20, 1964 or by person —

— service  
43. April 30, 1962

## Conditions

- |            |          |           |     |
|------------|----------|-----------|-----|
| 1. A B C   | 6.       | 11.       | 16. |
| 2. A B C   | 7.       | 12.       | 17. |
| 3. A B C D | 8. A B C | 13.       | 18. |
| 4. A B     | 9. A B C | 14. A B C | 19. |
| 5.         | 10.      | 15.       | 20. |
|            |          |           | 21. |

Approve ☐Void ☐Tech. Reviewer *DBH* Date 5-14-62Chief *REB* Date 5/31/62

Mail to:

Emery

Date Mailed

November 4, 1963

Mr. Bell  
Isotopes Branch  
Division of Licensing  
and Regulation  
U. S. Atomic Energy Commission  
Washington 25, D. C.

Dear Mr. Bell:

I write concerning the telephone conversation we had some two weeks ago when we discussed a license application sent in by Dr. E. Emery of Monsanto Chemical Company, St. Louis, Missouri. During this conversation, I confirmed that detectors containing only 200 millicuries of tritium were being manufactured and distributed by F & M and Dr. Emery's license application for 250 millicuries was an error.

Dr. Emery has not, as yet, placed an order for a radioactive detector with us. If he had, he would have received a form letter from us supplying the correct information for his license application. Part of this form letter, together with a letter explaining the situation, have been sent to Dr. Emery and copies are enclosed.

I hope this will clarify the situation from your aspect and suggest that you contact us if further information is required.

Very truly yours,

*J. Peters*  
J. Peters  
Research Chemist

JP:dm

Encl.



*A/21*

*original & enclosures  
in Sealab Source  
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