

U. S. ATOMIC ENERGY COMMISSION

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BYPRODUCT MATERIAL LICENSE No. 24-1113-9, AMENDMENT NO. 1

(Rev. 1-54)

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.

<p>Licensee</p> <p>1. Name Monsanto Chemical Company Organic Chemicals Division</p> <p>2. Address 1700 South Second Street St. Louis 77, Missouri</p>		<p>In accordance with letter dated October 3, 1963, 24-1113-9 is amended in its entirety to read as follows:</p> <p>3. License number</p> <p>4. Expiration date May 31, 1964</p> <p>5. Reference No.</p>	
<p>6. Byproduct material (element and mass number)</p> <p>A. Hydrogen 3 (see page 2)</p>	<p>7. Chemical and/or physical form</p> <p>A. Titanium tritide foil (Radiation Research Corp. Model TS-1 or T-51)</p>	<p>8. Maximum amount of radioactivity which licensee may possess at any one time</p> <p>A. 250 millicuries</p>	
<p>9. Authorized use</p> <p>A. To be used in Barber-Colman Company ionization detector as part of a Barber-Colman Company Model 61-C gas chromatography unit. (see page 2)</p>			

CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
11. The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards For Protection Against Radiation".
12. Byproduct material shall be used by, or under the supervision of, E. K. Emery.
13. The licensee shall not open or remove sealed sources containing byproduct material from their respective source holders.
14. 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.
- (see page 2)**

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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
C. Hydrogen 3	C. Titanium tritide foil (U.S. Radium Corp. Model LAB 508-1) contained in Perkin- Elmer Corp. Model 154-0709 Detector Cell	C. 250 millicuries
D. Hydrogen 3	D. Titanium tritide foil (U.S. Radium Corp. Model LAB 508-1) contained in F & M Scientific Corp. Model 2-2830 or 2-2837 Detector Cell	D. 400 millicuries (two detector cells containing 200 millicuries each)

9. Authorized use

- B. To be used in Barber-Coleman Company ionization detector as part of a Barber-Coleman Company Model 61-C gas chromatograph unit.
- C. To be used in Perkin-Elmer Corporation Model 154 gas chromatography unit.
- D. To be used in F & M Scientific Corporation Model 810 gas chromatography unit.

CONDITIONS

14. (Continued)

- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive contamination on the test sample. The test sample shall be taken from the sealed source or from the surface 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, (see page 3)

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14. C. (Continued)

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, Region III, Division of Compliance, USAEC, Gateway Professional Building, Oak Brook, Illinois.

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

15. 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, and letters dated October 3, 1963, and November 4, 1963, from Edward M. Barry.

Date NOV 12 1963

For the U. S. Atomic Energy Commission

Original Signed by
Robert E. Driskman

by Robert E. Driskman

Division of Licensing and Regulation
Washington 25, D. C.

202 letter dated Oct 3, 1963 from *Charles W. Emery*

Date Received OCT 7 1963	Expiration Date <i>May 3, 1967</i>	Issue Date	Tech. Reviewer <i>REB</i>
Control No. <i>4455</i>	Reference No.	License No. <i>24-1113-7(264)</i>	Amendment No. <i>1 Entry</i>
Isotope	Form	Possession Limit	
A. Hydrogen 3	A. Tetracene tube foil (Radiation Research Corp. Model TS-1 or T-21)	A. 250 mc	
B. Hydrogen 3	B. Copy from license	B. 25 mc	
C. Hydrogen 3	C. Tetracene tube foil (U.S. Radium Corp. Model LAB 508-1, contains	C. 250 mc	
D.	D. in Parkin-Elmer Model 154-0707	D.	
E.	E. Detector cell.	E.	
F. D. Hydrogen 3	F. D. Tetracene tube foil (U.S. Radium Corp. Model LAB 508-1) contained in	F. D. <i>WLC</i> 250 mc <i>2 liters</i>	
G.	G. F. & M. Corp. Model 2-2830 R	G.	
H.	H. 2-2837 Detector Cell.	H.	

Authorized Use

- 9A. To be used in Barker-Coleman ^{Company} ionization detector as part of a Barker-Coleman Model 61-C gas chromatography unit.
- 9B. To be used in Barker-Coleman ^{Company} ionization detector as part of a ^{in Barker-Coleman Company} Model 61-C gas chromatograph unit.

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

- 9C. To be used in Parkin-Elmer Corporation Model 154 gas chromatography unit.
- 9D. To be used in F. & M. Scientific Corporation Model 810T gas chromatography unit.
11. (15) Telephone call by Jack Burt on 10/15/63 to Mr. Feltre re 2-2830 detector cell (200mc) H³

12. (19) E.M. Emery.
13. (25)

14. (31) *C. Reagin TIL*
D. Copy D. of license

15. (43) application dated April 30, 1962 and letter dated Oct. 3, 1963 from *Charles W. Emery*

Mail To:

Emery

Date Mailed

NOV 12 1963

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.	9. A.B.C.	14. A.B.C.	19.
5.	10.	15.	20.
			21.
Approve <i>REB</i>		Void	
Tech. Reviewer <i>REB</i>		Date <i>11/10/63</i>	
Chief <i>REB</i>		Date <i>11/12/63</i>	