

U. S. ATOMIC ENERGY COMMISSION  
BYPRODUCT MATERIAL LICENSE

License No. 24-01113-09  
Page 1 of 2 Pages  
Amendment No. 04

Pursuant to the Atomic Energy Act of 1954 and Title 19, Code of Federal Regulations, Chapter 1, Parts 30, 32, 33, 34, and 35, 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 Company**  
**Organic Chemicals Division**  
2. Address **1700 South Second Street**  
**St. Louis, Missouri 63177**

In accordance with application dated  
March 2, 1967,

3. License number 24-01113-09 is amended  
in its entirety to read as follows:

4. Expiration date **May 31, 1968**

5. Reference No.

6. Byproduct material  
(element and mass number)

7. Chemical and/or physical  
form

8. Maximum amount of radioac-  
tivity which licensee may pos-  
sess at any one time

A. Hydrogen 3

A. Tritium foil

A. Not to exceed  
250 millicuries per  
detector cell

B. Strontium 90

B. Foils in Barber-  
Colman 61-C  
Detector Cell Unit

B. Not to exceed  
25 millicuries per  
detector cell

C. Nickel 63

C. Foils in F & M  
2-6195 Detector  
Cell Unit

C. Not to exceed  
2 millicuries per  
detector cell

9. Authorized use

- A. To be used with Barber-Colman Company, Perkin-Elmer Corporation, and F & M Scientific Corporation gas chromatography units for sample analysis.
- B. To be used with Barber-Colman Company gas chromatography units for sample analysis.
- To be used with F & M Scientific Corporation gas chromatography units for sample analysis.

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BYPRODUCT MATERIAL LICEN.Page 4 of 5 Pages

Supplementary Sheet

License Number 24-0111-

CONDITIONS

Amendment No. 04

10. Byproduct material may only be used at 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, Edward M. Emery.
13. Detector cells containing Hydrogen 3 foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.
14. Strontium 90 or Nickel 63 foils shall not be removed from detector cells by the licensee.
15. A. Detector cells with Strontium 90 or Nickel 63 foils shall be leak tested at intervals not exceeding 6 months. In the absence of a certificate from a transferor indicating that a test has been made within 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 radioactive material on the test sample. 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.

(Continued on Page 3)

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Supplementary Sheet

License Number 24-01113-00

15. (Continued)

CONDITIONS

Amendment No. 04

- 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 5 days of the test with the Director, Division of Materials Licensing, U. S. Atomic Energy Commission, Washington, D. C., 20545, 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, Oakbrook Professional Building, Oak Brook, Illinois, 60523.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State to perform such services.
16. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), Title 10, Code of Federal Regulations, Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing byproduct material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.
17. 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 March 2, 1967.

MAR 17 1967

Date \_\_\_\_\_

For the U. S. Atomic Energy Commission

Original Signed By

Robert E. [Signature]

by Isotopes BranchDivision of Materials Licensing  
Washington, D. C. 20545

WBA/gjk

RAB 3/17/67

LICENSE CONTROL FORM

APPLICANT Monsanto Company Organic Chemicals Division 1700 South Second Street St. Louis, Missouri 63177	LICENSE NUMBER	Amnd. No.	EXPIRATION DATE	CONTROL NUMBER
	24-01113-09	47	May 1967	92744
	DATE REC'D	DATE ISSUED	PMUS	ASG
	02-06-67	MAR 17 1967	614	REB
				92744

( ) LETTER ( ) APPLICATION DATED: 3/17/67

BYPRODUCT	CHEMICAL OR PHYSICAL FORM	POSS. LIMIT
A Hydrogen 3	A. Tritium foil	A. not to exceed 25 millimicros per detector cell
B. Strontium 90	B. foils in Barber Colman 61-C detector cell unit	3. not to exceed 25 millimicros per detector cell
C. Nickel 63	C. foils in F+M 2-6145 detector cell unit	C. not to exceed 2 millimicros per detector cell

A. to be used with ~~Barber~~ Barber-Colman Company, Parker-Elmer Corporation, and F+M Scientific Corporation gas chromatography units for sample analysis

B. to be used with ~~Barber-Elmer~~ Barber-Colman Company gas chromatography units for sample analysis

C. to be used with F+M Scientific Corporation gas chromatography units for sample analysis

(1a)

(5)

(2) Edward M. Emery

(21)

(1) Strontium 90 or Nickel 63 foils shall not be removed from detector cells by the licensee.

(11) (A) Strontium 90 and Nickel 63

(B) Detector cells with Strontium 90 or Nickel 63 foils shall be leak tested at intervals not exceeding 6 months.

MAIL TO:	DATE MAILED:	REVIEWER:	DATE COMPLETED:
Emery	MAR 17 1967	REB	3/17/67

✓  
JAN 22 1968

CO:RE  
24-1113-9

Monsanto Company  
1700 South Second Street  
St. Louis, Missouri 63177

Attention: Mr. Edward M. Emery  
Research Laboratories

Gentlemen:

Thank you for your letter of January 3, 1968, reporting  
the loss of 200 millicuries of tritium.

Your cooperation with us is appreciated.

Very truly yours,

Original signed:

L. B. Low

Laurence B. Low, Director  
Division of Compliance

bcc: Public Document Room) - w/cpy ltr of 1/3/68  
DML:IB )  
CO:HQ )  
C. F. Eason, GM (WCTF))  
Incident File:EB )  
CO:III  
REG Reading File

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OFFICE ▶	CO	CO	CO		
SURNAME ▶	RHandler:kt	JRK	REEngelken		
DATE ▶	1/15/68	1/16/68	1/17/68		

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# Monsanto

C O M P A N Y

ORGANIC CHEMICALS DIVISION

1700 South Second Street  
St. Louis, Missouri 63177  
(314) MAin 1-4000

January 3, 1968

AIR MAIL

Director  
Division of Materials Licensing  
U.S. Atomic Energy Commission  
Washington, D. C. 20545

Gentlemen:

This is to inform you of the loss during shipment of an F & M Micro Cross Section Detector Model 2-2830 containing U.S. Radium Lab 508-1 foil (Monsanto Purchase Order No. AT 6988 of June, 1966) for use in F & M Models 810 and 5756A gas chromatographs. Possession of this detector is covered by AEC License No. 24-01113-09.

Due to an unusual combination of circumstances, our records now reveal that this detector was actually shipped last March, but the loss was just now discovered. This detector along with a Ni<sup>63</sup> Electron Capture Detector was part of a capital purchase for a new Model 5756A gas chromatograph. The chromatograph was received on November 17, 1966, but the micro cross section and electron capture detectors were back-ordered. We received the electron capture detector on May 23, 1967, and assumed that the micro cross section detector was still back-ordered.

The J. F. Queeny Plant Receiving Department at 2011 Kosciusko, St. Louis 63177, handles all capital purchases for our Research Laboratories. We have just now discovered that the micro cross section detector apparently arrived in the J. F. Queeny Plant Receiving Department on March 29, 1967, as evidenced by the presence in their files of a dated packing list. An invoice was subsequently received and paid by the J. F. Queeny Plant Purchasing Department. However, our Research Laboratories never received this package and was never notified that this account had been closed.

We have double checked and searched every possible location where the package might be in Research. In addition, I have personally searched the J. F. Queeny Plant Receiving Department, Instrument Shop and Planters Cage where the package might mistakenly be

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January 3, 1968

stored. Finally, plant personnel have made a thorough search of the entire J. F. Queeny Plant for the item. The attached photographs of the very similar electron capture detector and shipping carton from the May 23 shipment were prepared and circulated widely. The missing detector, mounted inside of an aluminum casting measuring only 2 x 3 x 6 inches, was shipped in a carton measuring 12 x 14 x 18 inches, mostly containing light weight plastic foam pellets. It is our joint conclusion that this light weight carton was thought to be empty by someone in the plant and put in a combustible waste bin, whereupon it was subsequently incinerated. No trace of the detector or shipping carton has been found.

We have set-up a new procedure with the plant receiving department to improve delivery methods in the future on such items. Hereafter, all radioactive orders will be marked for special handling and with the name of the person originating the order. All such shipments will now be received at only one location, the J. F. Queeny Plant Receiving Department at 2011 Kosciusko Street. Upon receipt of the package, the person originating the order will immediately be telephoned that the order is in and the package will be delivered directly to this person in his laboratory.

I am very sorry to be so late in reporting the loss of this shipment containing 200 millicuries of titanium tritide.

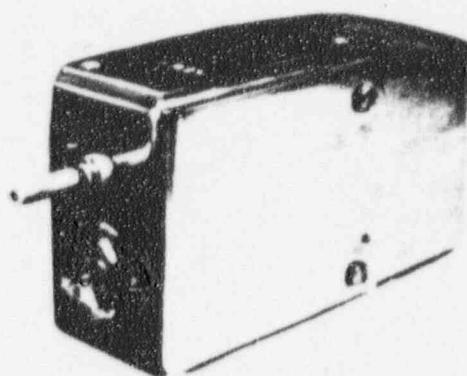
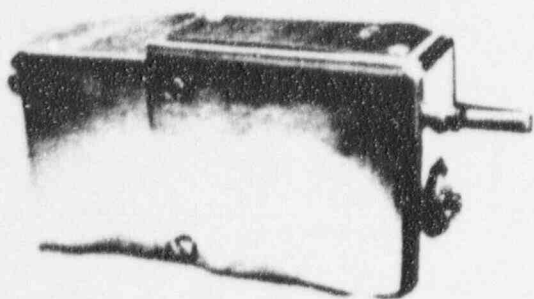
Sincerely,

Edward M. Emery  
Research Laboratories

Attachment\$

cc: Director, Region III

JP



## Have You Seen

a piece of equipment like this?

It could have been shipped in  
a container like the one shown  
here .

If so, please call Vern Fox ,  
Queeny Plant immediatly.

station 3350—270

