

UNITED STATES ATOMIC ENERGY COMMISSION  
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INSTRUCTIONS. - Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Isotopes Branch, Division of Materials Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Part 20.

1 (a) NAME AND STREET ADDRESS OF APPLICANT (Institution, firm, hospital, person, etc. Include ZIP Code.)		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED (If different from 1 (a). Include ZIP Code.)
Monsanto Company 800 N. Lindbergh Blvd. St. Louis, Mo. 63166		
2 DEPARTMENT TO USE BYPRODUCT MATERIAL Central Research Dept.		3 PREVIOUS LICENSE NUMBER(S) (If this is an application for renewal of a license, please indicate and give number.) 24-1113-15(D65) Renewal
4 INDIVIDUAL USER(S) (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.) R. J. McManis L. C. Weger C. H. Adams H. W. Mohrman Don Carter		5 RADIATION PROTECTION OFFICER (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.) T. F. Gilmore
6 (a) BYPRODUCT MATERIAL (Elements and mass number of each.) Cesium 137	(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.) 450 millicuries sealed source in Nuclear - Chicago Model 506 gauge for continuous density measurement	

7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for human use, Supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

Continuous density measurements of polymeric materials

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(Continued on reverse side)

## TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

B. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	Same as previous application		Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments			Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes No	Yes No
d. Biological effects of radiation			Yes No	Yes No

## 9. EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Same as previous application				

## 10. RADIATION DETECTION INSTRUMENTS (Use supplemental sheets if necessary)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm <sup>2</sup> )	USE (Monitoring, surveying, measuring)
Same as previous application					

## 11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

Same as previous application

## 12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

Same as previous application

## INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No **No**

14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.

Same as previous application as amended

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

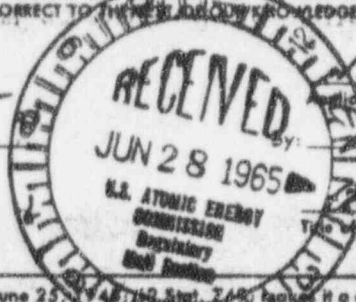
Same as on previous application as amended

## CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 20, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Date

June 24 1965



Monsanto Company

Applicant named in Item 1

Administrator, Res. Center

Title of certifying official

WARNING.—18 U. S. C., Section 1001; Act of June 25, 1948 (60 Stat. 247) makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States or to any person within its jurisdiction.

(21)

CONTROL NO.	July 27, 1967 REFERENCE NO. 24-1113-15	LICENSE NO. 24-1113-15 (1967)	WEH AMENDMENT NO.
ISOTOPE	FORM	new POSSESSION LIMIT	
A. Cs <sup>137</sup>	A. s.s. (Nuclear Chicago Model RR-15B)	A. 450mc	
B.	B.	B.	
C.	C.	C.	
D.	D.	D.	
E.	E.	E.	
F.	F.	F.	
G.	G.	G.	
H.	H.	H.	

AUTHORIZED USE

To be used in a Nuclear Chicago Model 506 source holder for continuous  
density measurements

(5)  
Disturb

(13)  
(30) "leak testing" ... by the Nuclear Chicago Corp. or by other

(100)  
percent 16 - Amend 1 - 24-1113-15

MAIL TO: Murray	DATE MAILED JUL 8 1965	REVIEWER WEH	DATE 7/1/65
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7/8/65

# ATOMIC ENERGY COMMISSION BYPRODUCT MATERIAL LICENSE

Page 1 of 2

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations made before 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 applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

## Licensee

1. Name <b>Monsanto Company</b>		3. License number <b>24-1113-17</b>
2. Address <b>800 N. Lindbergh Boulevard St. Louis, Missouri 63166</b>		4. Expiration date <b>(G67) July 31, 1967</b>
6. Byproduct material (element and mass number) <b>A. Cesium 137</b>	7. Chemical and/or physical form <b>A. Sealed source (Nuclear- Chicago Model RR-138)</b>	5. Reference No. <b>24-1113-15</b>
9. Authorized use <b>A. To be used in a Nuclear-Chicago Model 506 source holder for continuous density measure-</b> <b>ments.</b>		8. Maximum amount of radioac- tivity which licensee may pos- sess at any one time <b>A. 430 millicuries</b>

## CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above:
- The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation".
  - Byproduct material shall be used by, or under the supervision of, R. J. Matteniece, L. C. Weger, C. H. Adams, H. W. Mohrman, Don Carter, or T. F. Gilmore.
  - Sealed sources containing byproduct material shall not be opened or removed from their respective source holders by the licensee.
  - Maintenance, repair, and initial radiation survey of devices containing byproduct material and installation, replacement, and disposal of sealed sources containing byproduct material used in devices shall be performed only by the Nuclear-Chicago Corporation or by other persons specifically authorized by the Commission or an Agreement State to perform such services.

(see page two)

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U. S. ATOMIC ENERGY COMMISSION  
BYPRODUCT MATERIAL LICENSE

Supplementary Sheet

License Number 24-1113-17  
(G57)

Conditions continued:

15. 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 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 microcuries 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.
  - C. If the test reveals the presence of 0.005 microcuries 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 Nuclear-Chicago Corporation, or by other persons specifically authorized by the Commission or an Agreement State to perform such services.
16. 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 15, 1963, and letter dated January 24, 1964, from L. C. Wager.

For the U. S. Atomic Energy Commission

Original Signed by  
Robert E. Brinkman

Date JUL 8 1965

by Richard E. Brinkman  
Division of Materials Licensing  
Washington, D. C. 20545

*WET/msh*

*REB 7/8/65*

# Monsanto

C O M P A N Y

800 N. Lindbergh Boulevard  
St. Louis, Missouri 63166  
(314) OXford 4-1000

July 31, 1967

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

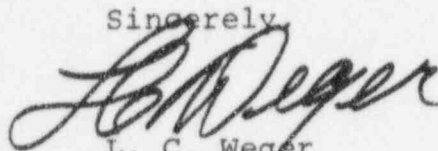
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Gentlemen:

According to your instruction, attached is Form HQ-277 completed to show disposition of the Cesium 137 source which was obtained under our License 24-01113-17.

With the return of this source to the supplier, this license can be terminated.

Sincerely,



L. C. Weger  
Safety Manager

cc: T. F. Gilmore  
R. J. McManimie  
U. S. AEC- Div. of Compliance

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