

## APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INSTRUCTIONS - Complete Items 1 through 16 if this is an initial application. If application is for renewal of a license, complete only Items 1 through 7 and indicate new information or changes in the program as requested in Items 8 through 15. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail three copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545. Attention: Isotopes Branch, Division of Licensing and Regulation. 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.) Monsanto Company Carondelet Plant 8201 Idaho Avenue St. Louis, Missouri 63111		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a).) NA	
2. DEPARTMENT TO USE BYPRODUCT MATERIAL Central Lime Slurry.		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.) 24-1113-13 24-1113-13 Amendment #1	
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.) W. S. Henderson, Maint. Supv. E. R. Billen, Maint. Supt.		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.) E. R. Billen	
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.) 5 sealed sources 750 mc each Total 3,750 curies Source Model #LAB-713 (S)-E	
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.)  Ohmart density gauges to measure specific gravity of lime slurry in a 3", Scheduled 40 pipe line. Continuous operation. Process temperature is 30°C to 100°C.  Sealed source contained in Ohmart LASR source holder.			

(Continued on reverse side)

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

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	By Ohmart engineer at time of installation	1-2 days	(Yes) No	Yes (No)
b. Radioactivity measurement standardization and monitoring techniques and instruments	By Ohmart engineer at time of installation	1-2 days	(Yes) No	Yes (No)
c. Mathematics and calculations basic to the use and measurement of radioactivity	By Ohmart engineer at time of installation	1-2 days	(Yes) No	Yes (No)
d. Biological effects of radiation	By Ohmart engineer at time of installation	1-2 days	(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
INSTRUCTION ON OPERATION OF GAUGE AND LEAK TEST PROCEDURE ON SOURCE HOLDER BY OHMART ENGINEER AT TIME OF INSTALLATION OF GAUGE.				
WIPE TEST SERVICE CONTRACT PURCHASED FOR FIVE YEARS.				

## 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)
NONE REQUIRED					

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

NONE REQUIRED

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

NONE REQUIRED

## INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS

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

NONE REQUIRED

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.

SEE ATTACHED SHEET

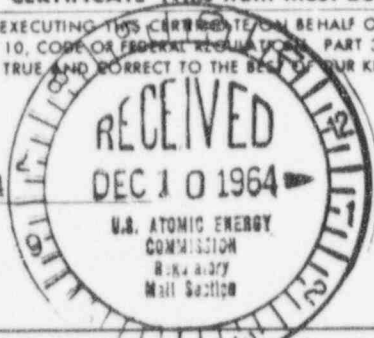
15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

SEE ATTACHED SHEET

## 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 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Date December 7, 1964



MONSANTO COMPANY

Applicant named in item 1

By: E. R. Billen

MAINTENANCE SUPERINTENDENT

Title of certifying official

WARNING.—18 U. S. C., Section 1001; Act of June 25, 1948, 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

ATTACHED SHEET - FORM AEC-313 (2-57)

ITEM 14

- A. Control Measures - If process is shut down and pipe is empty, source holder will be placed in CLOSED position. If source holder is removed from pipe, it will be placed in the CLOSED POSITION before removal.
- B. Initial radiation survey was made by the Ohmart field engineer at the time of installation of the gage. A copy of the radiation survey are on file for future reference.
- C. If maintenance or repair of the source holder is required, it will be returned to the Ohmart Corporation in the CLOSED position. The Ohmart Corporation will be contacted for detailed shipping instructions.

The Ohmart Corporation, the Local Public Health agency, the regional Operation Office of the AEC, or other qualified agency will be contacted immediately in the event of an emergency involving the source holder. (Such emergency might be a fire or explosion involving the source holder or damage to the source holder which would prevent placing it in the CLOSED position.) In the event of an emergency, the area in the vicinity of the source holder will be barricaded until inspected by a qualified person.

- D. Leak Test Procedure - A test is performed on the surface of the source holder every six months by W.S. Henderson, Maintenance Department Supervisor, to assure that there has been no leakage of radioactive material from the source container in the source holder. The leak test materials are supplied and analyzed by the Ohmart Corporation. The Ohmart Corporation standard "Leak Test Procedure for Sealed Sources (6-58) - Sealed Sources in Ohmart Source Holders" will be followed.

ITEM 15

Whenever the source holder is not needed, it will be returned to The Ohmart Corporation. The Ohmart Corporation will be contacted for detailed shipping instructions.

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Radioisotopes may be distributed only to applicants equipped to observe safety standards for the protection of health. This part of form AEC-313 must be completed in triplicate and left attached to your first application. It may be detached from subsequent applications provided, there is no change in availability of the items listed.

19. DATE \_\_\_\_\_

August 9, 1954

21. DEPARTMENT

Engineering

22. KIND OF INSTRUMENT	23. MAKE AND SERIAL NO.	24. SENSITIVITY RANGE <i>(Include window thickness in mg/cm<sup>2</sup>)</i>	25. USE <i>(Health monitoring or measurement)</i>
<b>Densitrons</b>	<b>Instruments, Inc.</b>	<b>0-3000 cps</b>	<b>Measurements</b>

A/209

0-100 and calibrated 0-2 milliroentgen per hour

Weekly during test and use of Cobalt 60



APPLICATION FOR RADIOISOTOPE PROCUREMENT

PART TWO  
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HEALTH PROTECTION AND MONITORING

28. DESCRIBE PROCEDURES PROPOSED FOR MONITORING AND HEALTH PROTECTION (Particularly those special features pertinent to your work)

Radioisotope will be removed by 5 ft. handling tongue and personnel handling will have rubber gloves and dosage meter will be carried by an assistant during all handling. When not in use sources will be stored 6 ft. under ground in steel pipe with 1/4" walls and 6" concrete cover.

29. NAME AND TITLE OF PERSON TO WHOM RESPONSIBILITY FOR HEALTH PROTECTION WILL BE DELEGATED

C. H. Atwell Instrument Supervisor With Assistance of Bill Huffman of the Safety Dept.

30. EXPERIENCE OF ABOVE PERSON (Item 29)

Same as Item #4

MISCELLANEOUS EQUIPMENT FOR HEALTH PROTECTION

31. LIST AND DESCRIBE BRIEFLY (Radiation, shielding, respirators, ventilated hoods, remote handling equipment, etc.)

Sources to be installed by suppliers' personnel. The source holder will be shielded with 1" lead shield. It shall be handled with a 5 ft. handling tongue.