

UNITED STATES ATOMIC ENERGY COMMISSION  
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form approved  
Budget Bureau No. 38-RG027

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.

030-11243 03120 00505

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc. Include ZIP Code.) Mobil Research & Development Corp. Research Dept., Central Research Div. P. O. Box 1025 Princeton, NJ 08540		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a). Include ZIP Code.) Mobil Technical Center Central Research Division Pennington-Rocky Hill Road Pennington, NJ 08534	
2. DEPARTMENT TO USE BYPRODUCT MATERIAL Catalysis Research Section		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.) 29-00505-05, -08, -09, -11, -12 (Terminated License Numbers)	
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.) Louis Deane Rollmann, PhD Senior Research Chemist		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.) Lester Levin (Certified Health Physicist) American Board of Health Physics No. 63-12 (Feb. 14, 1963)	
6. (a) BYPRODUCT MATERIAL (Elements and mass number of each) C <sup>14</sup>  H <sup>3</sup>		(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.) 100 millicuries C <sup>14</sup> as model organic compounds for research. Individual experiments will involve use of one millicuries or less total activity.  1000 millicuries tritium as water or as tritium gas. Individual experiments will involve use of ten millicuries or less.	
7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (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.)  Research into production of hydrocarbon fuels from coal, crude oils, and the like.		APPLICANT Check No. 246112 Amount. \$255 - 3K Date of Check. 4-23-75 Date Check Rec'd. 4-25-75 RECEIVED Byproduct Material License Unit APR 25 1975	

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## 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	Mobil Research and Development Corporation	1 mo.	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 effect 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
C <sup>14</sup> and H <sup>3</sup>	exempt quantities	Mobil R & D Corp.	2 months	Hydroprocessing Research

## 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)
A. Packard Model 3375 (Liquid Scintillation Counter)	1	$\beta + \gamma$	3x10 <sup>-10</sup> curies 1x10 <sup>6</sup> cpm	-	Measuring
B. Nuclear-Chicago Model 2612 (with thin window)	2	$\beta + \gamma$	0-20mr/hr	1.4mg/cm <sup>2</sup>	Surveying and Monitoring

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

Internal sources supplied by manufacturer. Calibrated every time used.

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

Deemed unnecessary for C<sup>14</sup> and tritium use.

## 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 ☐ see attachment
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 attachment
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 attachment

## 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.

Central Research Division  
Mobil R & D Corporation

Applicant named in item 1

Date 4/1/75

Manager

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.

13. Facilities and Equipment

Facility to be used is an enclosed hood exhausted with a face velocity of 100 ft./min. (minimum) located in a fully equipped laboratory room. The hood opening to the room is normally closed by double sliding windows during experimental testing.

14. Radiation Protection Program

The proposed work will be carried out under guidelines established in Mobil's Radiation Safety Policies and Procedures Manual and the New Jersey Radiation Protection Code. The work area and any containers holding radioactive materials will be prominently labeled 'Caution - Radioactive Material'. Radioactive materials will be stored in a locked, labeled metal cabinet under the hood. Film badges will be placed inside and outside hoods holding radioactive materials or being used as work areas for these experiments. Detailed records will be kept of the receipt and disposal of all radioactive materials.

15. Waste Disposal

It is proposed to use the services of Teledyne Isotopes, Westwood, New Jersey.