Supplementary Application

Form AEC-313 (5-58)

ATOMIC ENERGY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form approved. Budget Bureau No. 38-R027.3.

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 25, D. C. 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.)*

Melpar, Inc.
3000 Arlington Boulevard
Falls Church (Fairfax County),
Virginia

(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. *(If different from 1 (a).)*

2. DEPARTMENT TO USE BYPRODUCT MATERIAL

Research Division

3. PREVIOUS LICENSE NUMBER(S). *(If this is an application for renewal of a license, please indicate and give number.)*

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.)*

Dr. John F. Ambrose, Supervisor,
Physical Chemistry Branch
Mr. Gerald Halpert, Physical Chemist
Dr. Victor R. Huebner, Senior Scientist

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.)*

Mr. Louis P. Glekas
Research Division Safety Officer

6. (a) BYPRODUCT MATERIAL. *(Elements and mass number of each.)*

Hydrogen 3
(Tritium)

(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.)*

300 millicuries
Manufacturer considers it a "bound source." Titanium Tritide is deposited on stainless steel type 302 (.002 inches thick). Sources will be purchased precut to 9.1 mm diameter.

Mfr.: U. S. Rodium, Morristown, New Jersey
Model No.: LAB 508-1
No. of Sources: 1
Max. Activity Per Source: 100 millicuries

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.)*

For use in an electron capture detector for gas chromatography.

Cannot use commercially available electron capture detector due to the positioning of the source.

Device will be adapted with a temperature indicator to assure operation of source at or below 200°C.

(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			Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	See Application for Byproduct Material License, dated 8 June 1961 for Carbon 14 and attached sheet.		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
		See Item 8 above.		

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/cm²)	USE (Monitoring, surveying, measuring)
See Item 8 above.					

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

See Item 8 above.

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

See Item 8 above.

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

See Item 8 above.

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 Item 8 above.

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 Item 8 above.

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.

RECEIVED JUL 21 1961 U.S.A.E.C. Isotopes Branch Div. of L & R

Date 7/17/61

Melpar, Inc.
Applicant named in item 1

By P. E. Ritt
Director of Research
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.

U.S. GOVERNMENT PRINTING OFFICE: 1960 O - 568569

8. Type of Training

Dr. Victor R. Huebner, Senior Scientist, CW Branch

B.S. - Univ. of Wisconsin
M.S. - Auburn University
Ph.D. - Univ. of Wisconsin

During his graduate work at the University of Wisconsin where he majored in Biochemistry and Food Technology, Dr. Huebner was exposed to the theory of radiochemistry. He has had 5 years of experience at Armour and Company in the design and use of a gas chromatography detector containing a 50 μC. sealed source of Radium.

Summary:

	Where Trained	Duration	On the Job	Formal Course
8(a)	University of Wisconsin	2 Years		X
	Armour and Co.	3 Years	X	
8(b)	University of Wisconsin	2 Months		X
	Armour and Co.	3 Years	X	
8(c)	University of Wisconsin	2 Years		X
	Armour and Co.	3 Years	X	
8(d)	- - -	- - -	-	-

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9. Experience with Radiation

Summary	Source	Max. Amt.	Where Experience	Duration	Type of Use
Huebner	Radium	Microcuries	Armour and Co.	2 Years	Detector for Gas Chromatography