

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.)
Waltham Compass Corporation
609 Main Street
Waltham, Massachusetts 02154

(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1(a). - Include ZIP Code.)
Waltham Compass Corporation
(same address as 1a)

2. DEPARTMENT TO USE BYPRODUCT MATERIAL
See 1a

3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)
20-12943-01

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.)
a) Fred Marcell
b) Benjamin D. Pollack

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.)
See 4a

6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)
Promethium-147

(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.)
Sealed sources in the form of compass cards and compass crystals. Each card and crystal to have a maximum of 0.5 millicuries of activity on it as 3M Co. Model 1A2A radioluminous paint. Maximum number of compass cards and compass crystals in possession at any one time is 7500 of each.
2.0 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.)
See attached sheet

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SENT TO COMPLIANCE

40815

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	Tracerlab, Div. of Laboratory for Electronics, Inc., 1601 Trapelo Rd., Waltham, Ma. and Prof. Murray M. Bolton, Jr. of Massachusetts Institute of Technology, who has been retained as our Radiological Safety Officer.	3 days	Yes No	(Yes) No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Institute of Technology, who has been retained as our Radiological Safety Officer.		Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity	Prof. Bolton and Tracerlab	2 days	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 Commonwealth of Massachusetts certification attached to initial application, which resulted in issuance of License No. 20-12943-01.				

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 ²)	USE (Monitoring, surveying, measuring)

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

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

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

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 sheet attached to initial application, which resulted in issuance of License No. 20-12943-01.

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 sheet attached to initial application, which resulted in issuance of License No. 20-12943-01.

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 August 31, 1973

Waltham Compass Corporation
 Applied in item 1
 By Benjamin D. Pollack
 Clerk (Secretary)
 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.

COURSE
[unclear]

Question #7

These parts are to be used in the assembly of radioluminous compasses. As the parts are received from the manufacturer they will be inspected by one of the two individual users and stored until needed in a locked metal cabinet. The cabinet shall be marked "Caution - Radioactive Material" at all times that the luminous parts are stored therein. As they are needed for production, the parts will be removed from the cabinet by one of the two individual users.

At the end of the work day, all unassembled parts and assembled compasses that are not to be shipped immediately, will be returned to the cabinet.

Any damaged or defective parts will be stored in a plastic bag and disposed of by a company licensed to dispose of radioactive material. A maximum of 50 millicuries of radioactivity will be placed in any one bag.

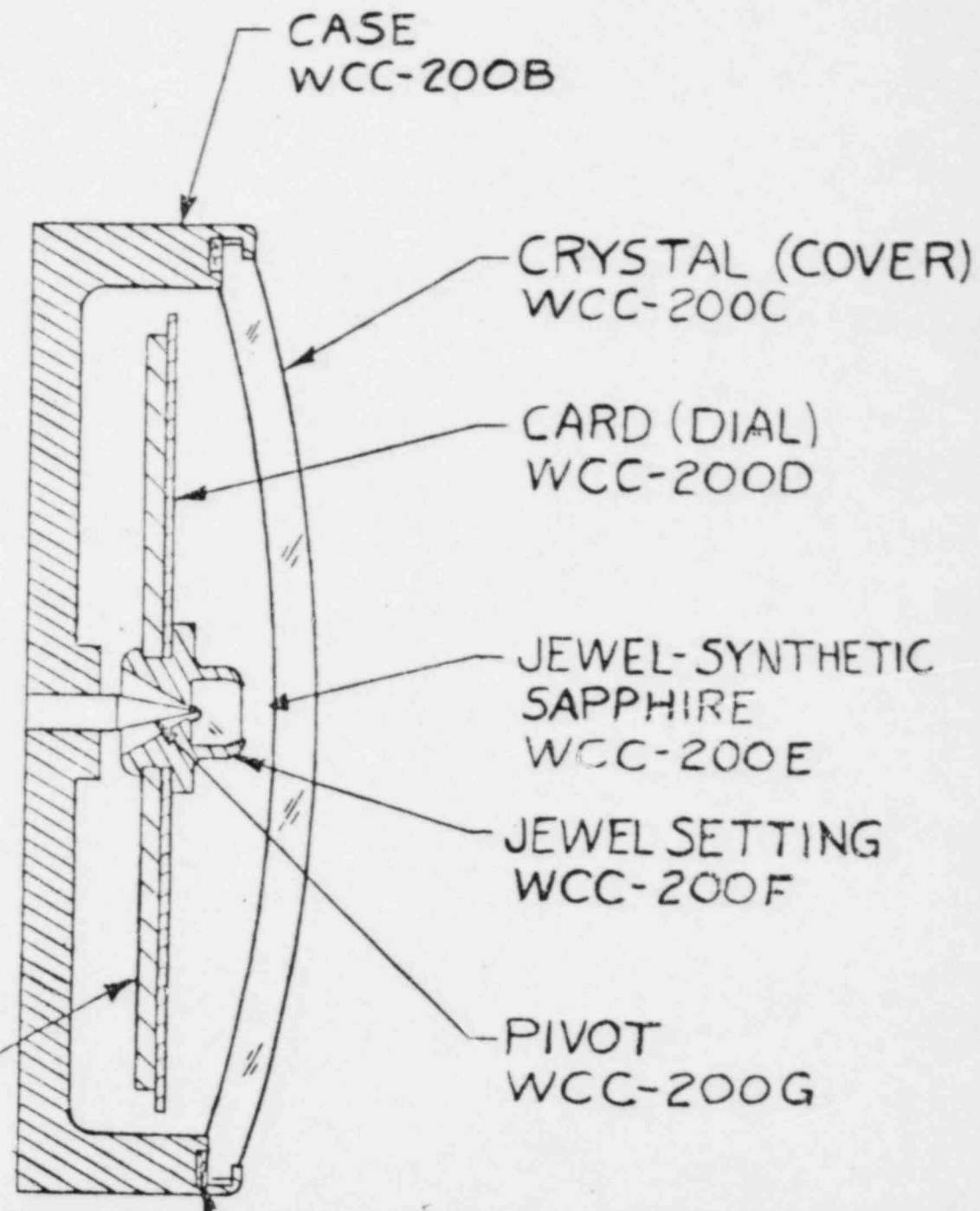
The assembled compasses will be marked according to the end users requirements and will be shipped only to users who possess a valid AEC or agreement state license.

In addition, a maximum of 10 assembled compasses, under the personal control of Benjamin D. Pollack, will be carried to various parts of the United States for demonstration purposes.

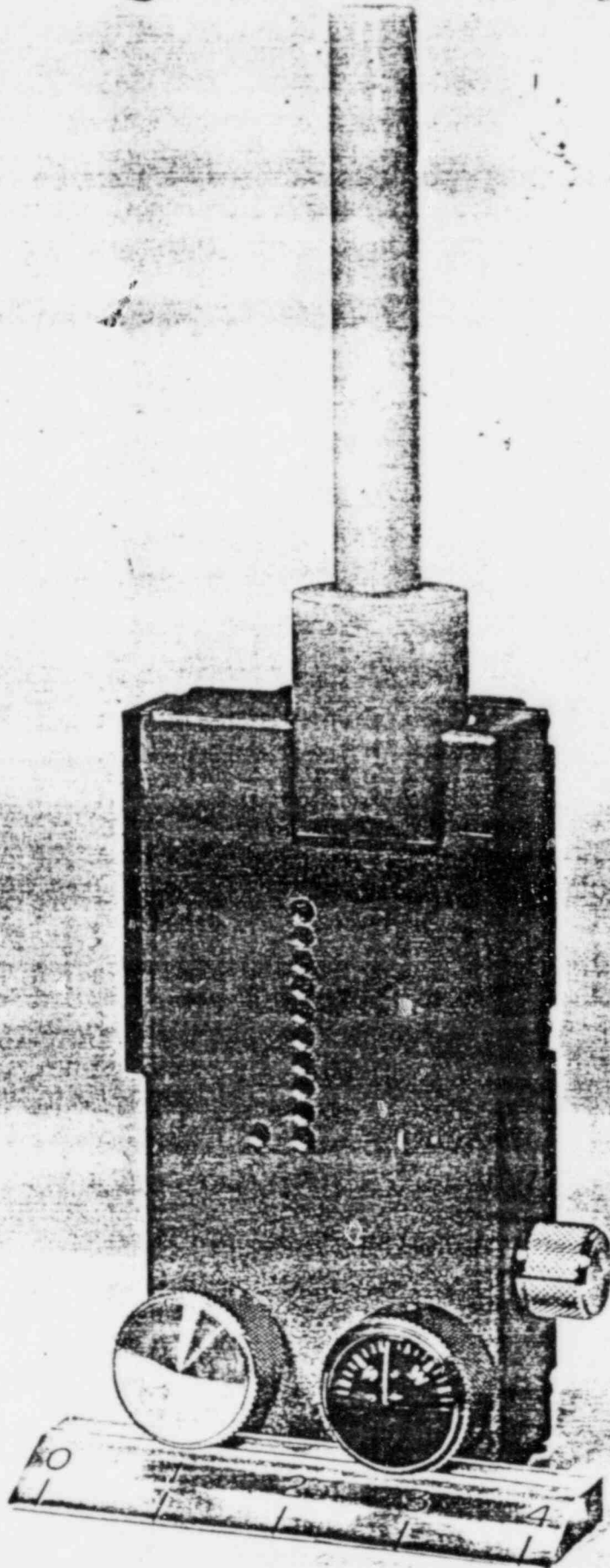
D

C

MAGNET BAR
HEAVY DUTY
WCC-200 A



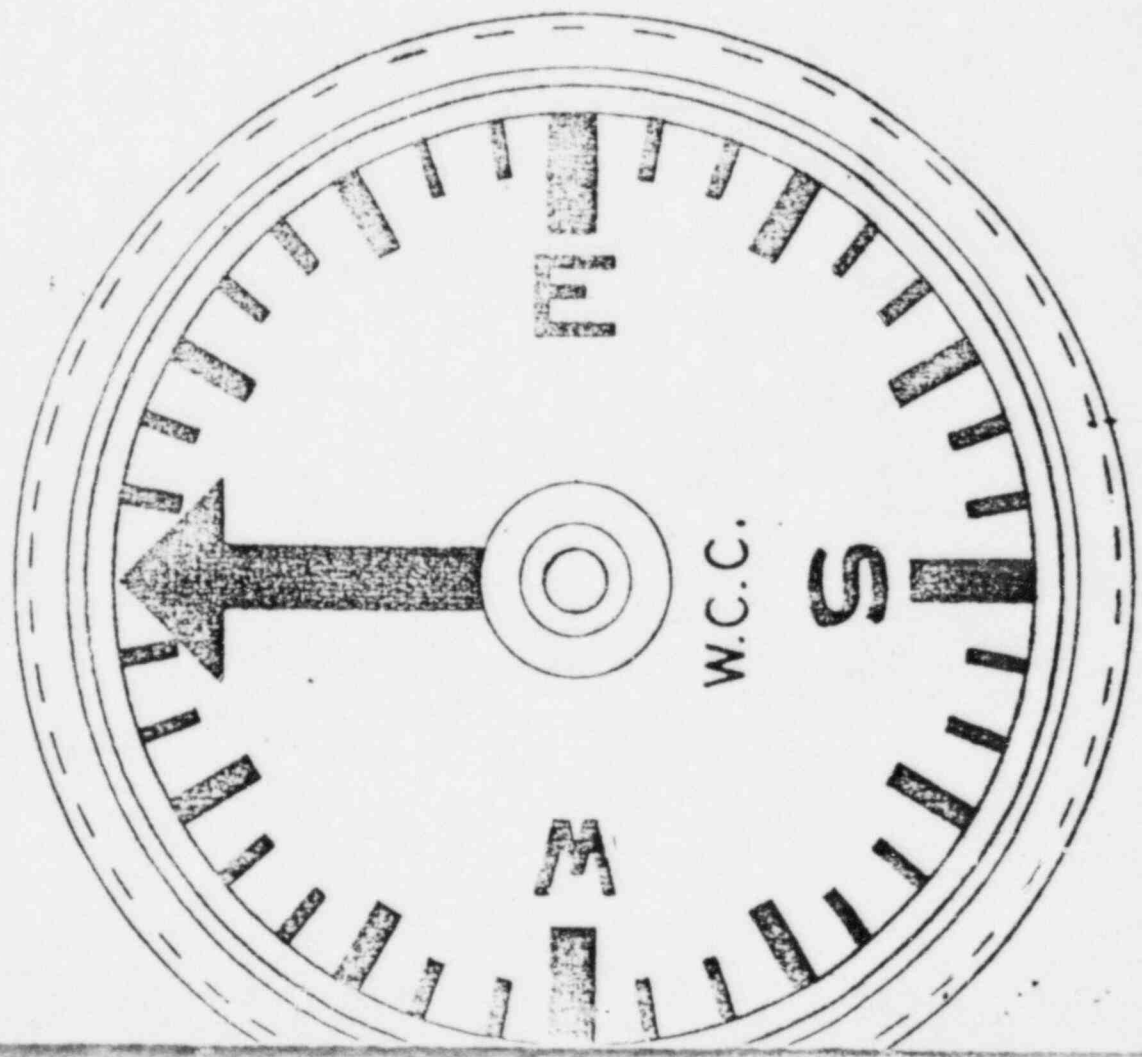
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ZONE	REVISIONS	DATE	APP
LFR	DESCRIPTION		



W.C.C.

LTR

WCC-200
B
A

DASH NO.	CODE IDENT	IDENTIFYING NO.	DESCRIPTION	SPECIFICATION	SEE NOTE NO.

MATERIALS AND SPECIFICATIONS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND DIMENSIONS IN PARENTHESES INDICATE THE THICKNESS OF PLATING				CONTRACT NO.		REL	WALTHAM COMPASS CORP WALTHAM, MASS.							
TOLERANCES ON:				DRAWN <i>E. Dugham</i>		DATE					ASSEMBLY, COMPASS, WRIST - MODIFIED (STRAP AND STRAP HOUSING COMPONENTS OMITTED)			
DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS		CHECKED		DATE								
.0004	± .02	± .010		± .015		± .020								
UNUSUAL DIMENSIONS ± 1/2				DESIGN ACTIVITY APPD.		DATE	SIZE	CODE IDENT NO.						
							C	29959						
							SCALE 5/1		WEIGHT		SHEET 1 OF 1			
							WCC-200 MODIFIED							

GASKET
WCC-200H

NOTE: COMPASS CRYSTAL (COVER) LUBBER LINE, COMPASS
CARD (DIAL) ARROW CARDINAL POINTS E, S & W
AND ALL 30° GRADUATION MARKS FILLED
AND TREATED WITH PROMETHIUM 147 3M
BRAND MODEL 1A2A RADIOLUMINOUS
PAINT

UNLESS OTHERWISE SPECIFIED THE SURFACE FINISH OF MACHINED PARTS SHALL NOT EXCEED A MAXIMUM READING ✓ 125 PER ANSI STD B46.1 — 1962		DI IN
INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5-66		UP 6
THD DATA TO BE INTERPRETED USING NBS HDBK H28 AND MIL-STD-9		AB
NEXT ASSY -	USED ON	
FIRST APPLICATION		

AEC-314
(1-68)

UNITED STATES ATOMIC ENERGY COMMISSION

CERTIFICATE-DISPOSITION OF RADIOISOTOPES

LICENSEE (Institution, Firm, Hospital, Person, etc.)

PROGRAM CODE:

03212

LICENSE NUMBER:

20-12943-01

EXPIRATION DATE:

09/30/73

WALTHAM COMPASS CORP
609 MAIN ST
WALTHAM

MASSACHUSETTS 02154

ADDRESS (if same as above write same)

DEPARTMENT(S)

-same-

INDIVIDUAL RADIOISOTOPE USER(S)

- a) Fred Marcell
- b) Benjamin D. Pollack

CERTIFICATION

The licensee and any individual executing this certification on behalf of the licensee certify that (check appropriate item(s) below):

NO BYPRODUCT MATERIALS HAVE BEEN PROCURED AND/OR POSSESSED BY LICENSEE.

OR

ALL BYPRODUCT MATERIALS PROCURED AND/OR POSSESSED BY LICENSEE UNDER BYPRODUCT MATERIAL LICENSE NO. 20-12943-01 HAVE BEEN:

- (1) TRANSFERRED TO (state name or institution, firm, hospital, person, etc.)
Defense Personnel Support Center, Philadelphia, Pa. and
Department of Defense Depots designated by DPSC.

WHICH HAS BYPRODUCT MATERIAL LICENSE NO. 37-10913-02

(2) DISPOSED OF BY DECAY.

(3) DISPOSED OF IN COMPLIANCE WITH THE PROVISIONS OF 10 CFR 20.

(4) LICENSED UNDER LICENSE NO. ISSUED BY
AN AGREEMENT STATE PURSUANT TO SECTION 274 OF THE ATOMIC ENERGY ACT OF 1954,
AS AMENDED.

REMARKS: (if additional space is needed use reverse side)

A portion of the byproduct materials were transferred to Fraass Surgical Mfg. Co., Inc. of Bronx, New York, which holds License No. 1397-1822 issued by the State of New York, which expires March 31, 1974.

SIGNATURE OF CERTIFYING OFFICIAL

Benjamin D. Pollack, Clerk (Secretary)

DATE

40815
August 31, 1973