

BECKMAN

May 26, 1988

United States Nuclear Regulatory Commission
Material Licensing Branch
Division of Industrial and Nuclear Safety
Mail Stop OWFN-6H3
Washington, D.C. 20555

Log	<i>June - 1 MFS</i>
439150	
460	
31	
Amendment	
Date	<i>6/1/88</i>
Date Cont.	<i>6/28/88</i>
By:	<i>Jackson</i>

ATTN: Mr. Michael Lamastra

RE: Amendment to By-Product Material License #04-02624-03E

Dear Sir:

We are requesting an amendment to the subject license to include a modification to the C-14 calibration standard used in our Model 171 Radiosotope Flow Detector. Enclosed is Check No. 439150 in the amount of \$60.00.

The function and the nominal level of radioactivity (0.025 uCi) of the unquenched C-14 sample will remain the same. The modifications involve changing from the currently used small glass ampule to a larger more rugged glass ampule. In addition, the C-14 labelled scintillation solution will be changed from pseudocumene to phenyl xlyethane, and the total volume will be changed from 0.4 ml to 4.0 ml.

The new ampule will be flame-sealed under nitrogen as is the currently used ampule. Finally, the screw-type supporting structure of the ampule will be replaced by an epoxy joint. The quality control procedures on this Beckman manufactured source will be just as stringent as those currently used.

Attached, in duplicate, are engineering drawings for the modified C-14 standard (see Attachments). Please amend the subject license to include the modifications indicated above.

We also request that you delete the following addresses from the subject license:

1. P.O. Box C-19600, Campus Drive and Jamboree Blvd, Irvine, CA
2. 2700 DuPont Drive, Irvine, CA

Rec'd 6/8/88

9001120120 881025
REG1 LIC30
04-02624-03E PDR

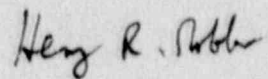
Beckman Instruments, Inc.
A MATHSON BECKMAN COMPANY

020550

Page 2
U.S. Nuclear Regulatory Commission
May 27, 1988

If you are in need of further information, please contact the undersigned at (714) 773-8025.

Sincerely,



Henry R. Robles
Corporate Radiation Safety
Officer

HRR:mw
Attachments

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QTY	ITEM	PART NO.	DESCRIPTION
3.9 g	1	70-736-01	PXE SCINTILLATION
0.032	2	70-237-01	BUTYL PBD
0.002	3	70-239-01	PBBO
1	4	897869	VIAL
A/R	5	70-043-06	TOLUENE, C-14
1	6	231221	LABEL
INF	--	605295-31	IN PROCESS TEST PROCEDURE
INF	--	605295-34	Q.C. PROCEDURE
INF	--	605295-71	CHEMICAL FORMULATION
INF	--	605295-80	ASSY INSTRUCTIONS

CHG	EO NO	DATE	BY	CHK

NOTE: 598897 QUENCH STANDARDS AND 599721 UNQUENCHED STANDARDS ARE REQUIRED FOR TESTING.

MATERIAL		UNLESS OTHERWISE SPECIFIED	QTY	ITEM	PART NO.	DESCRIPTION
		DIMENSIONS ARE IN INCHES TOLERANCES .1 ± .008 HUNDRED ± 0° 30' .01 ± .002 THOUS. SURF. 1125 .001 ± .005 MACH. SURF. ✓ THREADS: CLASS 2B OR 2B REMOVE BURRS & SHARP EDGES .020 MAX. MACH. FILLET RADII .020 MAX. MACH. SURF. FLAT WITHIN .001 IR/IR OTHER SURF. FLAT WITHIN .005 IR/IR CONCENTRICITY MACH. SURF. T.I.R. WITHIN 1/2 SUM OF DIA. TOLS., .001 MAX. DO NOT SCALE DRAWING	DR	SJB	1788	BECKMAN SCIENTIFIC INSTRUMENTS DIVISION 2500 Harbor Blvd., P.O. Box 3100, Fullerton, CA 92634-3100
			CHK			
			DSGN			
			ENGR			
			APPD			CODE IDENT NO. 05721 DWG NO. 905 — 605295
FINISH					A SIZE SCALE INIT USE 171 SHEET 1 OF 1	



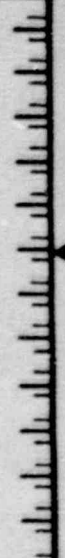
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- A. PURPOSE: TO ESTABLISH A PROCEDURE TO BE FOLLOWED TO INSURE STANDARDS PRODUCED AND SUPPLIED FOR THE MODEL 171 MEET SPECIFICATIONS REGARDING EFFICIENCIES AND IDENTIFICATION.
- B. SCOPE: THIS PROCEDURE WILL CONTROL THE MANUFACTURE OF THE ¹⁴C USED FOR CALIBRATION AND TEST OF THE MODEL 171 AS WELL AS THE PACKAGING AND LABELING OF THEM.
- C. RESPONSIBILITY: IT WILL BE THE RESPONSIBILITY OF MANUFACTURING TO RUN THE TESTS AS DESCRIBED IN THIS PROCEDURE.

IT WILL BE THE QUALITY DEPARTMENT'S RESPONSIBILITY TO INSPECT THE STANDARDS AS MANUFACTURED AND TO INSURE TEST DATA IS MAINTAINED FOR REFERENCE.

CHG	EO NO	DATE	BY	CHK

A
SIZE



MATERIAL

FINISH

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

TOLERANCES

X ± .050	ANGULAR ± 0° 30'
XX ± .020	1125
XXX ± .005	MACH. SURF. ✓

THREADS: CLASS 2A OR 2B

REMOVE BURRS & SHARP EDGES .020 MAX.

MACH. FLEET RADIUS .020 MAX.

MACH. SURF. FLAT WITHIN .001 IN./IN.

OTHER SURF. FLAT WITHIN .005 IN./IN.

CONCENTRICITY MACH. SURF.

T.I.R. WITHIN 1/2 SUM OF DIAS. TOLS. .001 MIN.

DO NOT SCALE DRAWING

QTY	ITEM	PART NO.	DESCRIPTION
DR	SJB	2788	BECKMAN SCIENTIFIC INSTRUMENTS DIVISION 2500 Harbor Blvd., P.O. Box 3100, Fullerton, CA 92634-3100 TITLE IN PROCESS TEST, MODEL 171 CALIBRATION STANDARDS
CHK			
DSGN			
ENGR			
APPD			
		A SIZE	CODE IDENT NO. 05721
			DWG NO. 001 — 605295-31
		SCALE	INIT USE 171 SHEET 1 OF 4



D. PROCEDURE

1. INSURE THAT THE LS COUNTER USED TO TEST THE MANUFACTURE OF THE MODEL 171 STANDARDS HAS THE CAPABILITY OF CALCULATING AN H#, HAS THREE CHANNEL COUNTING, AND DPM CORRECTION.
2. INSURE THAT THE LS COUNTER IS PROGRAMMED TO THE FOLLOWING PARAMETERS:
 - A) PRESET TIME = 15 MINUTES
 - B) H# REPEAT = 3
 - C) CYCLE AND = 1
SAMPLE REPEAT
 - D) CHANNEL 1 = 0-700
 - E) CHANNEL 1 2 = 0.9
SIGMA
 - F) DATA CALC = 5 (SINGLE LABEL DPM)
 - G) ALL OTHER VALUES ARE TO BE INSTRUMENT DEFAULT VALUES.
3. INSURE THAT THE TEST INSTRUMENT HAS BEEN CALIBRATED WITH THE MAXI MASTER TRITIUM STANDARD, P/N 599720, WHICH IS TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.
4. INSURE THAT THE DPM DATE CORRECTED VALUE OF THE MASTER 14C STANDARD, WHEN COUNTED, IS WITHIN + OR - 1.5% OF THE VALUE OBTAINED AT INSTRUMENT CALIBRATION.
5. AFTER THE VIAL HAS BEEN SEALED, PLACE THE CAP 597727 ON TOP OF THE VIAL AND SECURE WITH A SMALL PIECE OF SCOTCH TAPE.
6. DETERMINE THE DPM AND H NUMBER QUENCH VALUE FOR EACH STANDARD BY COUNTING THEM IN A MINI RACK ON THE TEST INSTRUMENT. SPECIFICATIONS ARE AS FOLLOWS:
 - A) ALL DPM'S ARE BETWEEN 40,000 AND 60,000 COUNTS.
 - B) H# AVERAGE FOR EACH SAMPLE SHOULD BE 2 ± 3 .

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DWG. NO. 001 - 605295-31

SIZE A SHEET 2 OF 4

7. HAVE THE COMPUTER PRINT OUT ON LABEL 231221 THE FOLLOWING INFORMATION.

- A) STANDARD NAME (CARBON-14)
- B) DPM
- C) EXPIRATION DATE (5 YEARS FROM TEST)
- D) LOT NUMBER (AS DETERMINED BELOW)

8. THE LOT CODE NUMBER IS DETERMINED BY THE METHOD OUTLINED BELOW.

- A) THE FIRST THREE LETTERS IDENTIFY THE BATCH. THE FIRST BATCH STARTS WITH "AAA", THE SECOND BATCH WILL BE "AAB", THE 27TH BATCH WILL BE "ABA".
- B) THE LAST FOUR DIGITS WILL INDICATE THE TEST RACK NUMBER AND THE TEST VIAL POSITION.

EXAMPLE: ABA 1201

 ___ POSITION #1
 ___ 12TH RACK
 ___ BATCH #27

9. HAVE THE COMPUTER PRINT A DATA SHEET LABEL FOR THE XXXXXX DOCUMENT. THE DATA WILL BE THE SAME AS ON THE 231221 LABEL.

10. INSURE THAT THE DPM'S OF THE STANDARDS AS WELL AS THE EXPIRATION DATE ARE IN THE APPROPRIATE BLANK ON THE CALIBRATION INFORMATION BROCHURE, P/N 247714, WHICH ACCOMPANIES EACH STANDARD OR SET OF STANDARDS.

11. WHEN MANUFACTURE OF THE STANDARDS HAS BEEN COMPLETED AND TESTING SATISFACTORILY ACCOMPLISHED, THE QUALITY CONTROL DEPARTMENT WILL REMOVE A COMPLETED SAMPLE AND RETAIN IT AS EVIDENCE AND FOR REFERENCE SHOULD THE NEED ARISE.

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DWG. NO. 001 - 605295-31

SIZE A SHEET 3 OF 4

12. THOSE VIALS THAT HAVE BEEN APPROVED - KEEP THE LABEL, DATA SHEET AND SAMPLE TOGETHER. ASSEMBLE THE COMPLETE CALIBRATION STANDARD, 523927.
13. INSURE THAT HARD COPIES OF THE TEST DATA ARE ACCURATELY IDENTIFIED AND FILED UNDER CONTROL OF THE Q.C. DEPARTMENT.
14. DISPOSAL OF REJECTED PRODUCT WILL BE IN ACCORDANCE WITH NRC, DOT AND OSHA REGULATIONS.

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DWG. NO. 001 - 605295-31

SIZE A SHEET 4 OF 4

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CHG	EO NO	DATE	BY	CHK

THE Q.C. DEPARTMENT IS RESPONSIBLE FOR VERIFYING THAT THE VIALS HAVE BEEN CONSTRUCTED ACCORDING TO PROCEDURE 605295-80 AND TESTED ACCORDING TO PROCEDURE 605295-31. THEY ARE TO MAINTAIN A FILE FOR EACH LOT WITH THE HARD COPY OF TEST DATA AND A COMPLETED RETENTION SAMPLE OF VIAL WITH CAP 597727 GLUED TO VIAL WITH LABEL 231221 ATTACHED TO CAP. THE PURPOSE IS FOR EVIDENCE AND REFERENCE SHOULD THE NEED ARISE.



MATERIAL		UNLESS OTHERWISE SPECIFIED		QTY	ITEM	PART NO.	DESCRIPTION
DIMENSIONS ARE IN INCHES TOLERANCES X ± .050 ANGULAR ± 0° 30' XX ± .020 ± 1/25 XXX ± .005 MACH. SURF. ✓ THREADS: CLASS 2A OR 2B REMOVE BURRS & SHARP EDGES .020 MAX. MACH. FILET RADIUS .020 MAX. MACH. SURF. FLAT WITHIN .001 IN./IN. OTHER SURF. FLAT WITHIN .005 IN./IN. CONCENTRICITY MACH. SURF. T.I.R. WITHIN 1/2 SUM OF DIAS. TOLS., .001 MIN. DO NOT SCALE DRAWING		DR	SJB	1/86	BECKMAN SCIENTIFIC INSTRUMENTS DIVISION 2500 Harbor Blvd., P.O. Box 3100, Fullerton, CA 92634-3100		
		CHK					
		DSGN			TITLE Q.C. PROCEDURE MODEL 171 CALIBRATING STANDARDS		
		ENGR					
		APPD			A SIZE	CODE IDENT NO. 05721	DWG NO. 001 — 605295-34
FINISH				SCALE	INIT USE	SHEET 1 OF 1	

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CNG	EO NO	DATE	BY	CHK

I. FORMULATION

70-736-01	PXE	4.0 ± 0.1 ML
70-237-01	BUTYL PBD	32 ± 0.20 MG
70-239-01	PBBO	2.0 ± 0.10 MG
70-043-06	TOLUENE C-14	AR FOR 50,000 DPM ± 15%

II. BATCH FORMULATION, TYPICAL 0.1 LITER

70-736-01	PXE	0.1 LITER
70-237-01	BUTYL PBD	0.8 ± 0.004 G
70-239-01	PBBO	50 ± 2 MG
70-043-06	TOLUENE C-14	AR - 12.5 X 10 ⁵ DPM

III. USE VIAL 897869 OR EQUIVALENT FOR STANDARD.

IV. FOLLOW PROCEDURE PART NO. 605295-80 FOR PREPARATION OF STANDARDS.

NOTE: DO NOT PREPARE MORE THAN ONE ISOTOPE AT A TIME; USE ONLY FRESH COCKTAIL.

MATERIAL		QTY	ITEM	PART NO.	DESCRIPTION						
<p>UNLESS OTHERWISE SPECIFIED</p> <p>DIMENSIONS ARE IN INCHES</p> <p>TOLERANCES</p> <table> <tr> <td>X ± .010</td> <td>ANGULAR ± 0° 30'</td> </tr> <tr> <td>XX ± .020</td> <td>1125</td> </tr> <tr> <td>XXX ± .005</td> <td>BACK SURF. ✓</td> </tr> </table> <p>THREADS: CLASS 2A OR 2B REMOVE BURRS & SHARP EDGES .020 MAX. 3XCH. FILET RADIUS .020 MAX. BACK SURF. FLAT WITHIN .001 IN./IN. OTHER SURF. FLAT WITHIN .005 IN./IN. CONCENTRICITY BACK SURF. T.I.R. WITHIN 1/2 SUM OF DIAS. TOL'S. .001 MM. DO NOT SCALE DRAWING</p>		X ± .010	ANGULAR ± 0° 30'	XX ± .020	1125	XXX ± .005	BACK SURF. ✓	DR	SJB	1/88	<p>BECKMAN SCIENTIFIC INSTRUMENTS DIVISION 2500 Harbor Blvd., P.O. Box 3100, Fullerton, CA 92634-3100</p> <p>TITLE INSTRUCTIONS, CHEM. PROCEDURE</p> <p>CODE IDENT NO. 05721 DWG NO. 010 — 605295-71</p>
		X ± .010	ANGULAR ± 0° 30'								
		XX ± .020	1125								
		XXX ± .005	BACK SURF. ✓								
		CHK									
DSGN											
ENGR											
APPD											
FINISH		A SIZE		SCALE	INIT USE	SHEET 1 OF 1					

A
SIZE

PROCEDURE FOR PREPARING SEALED STANDARDS, 605295

CHG	1	NO	DATE	BY	CHK

I. MANUFACTURING SPECIFICATIONS

A. EQUIPMENT SPECIFICATIONS

1. ALL MATERIAL CONTACT PARTS MUST BE MADE OF STAINLESS STEEL, FLUOROCARBON, GLASS, TYGON F-4040 TUBING, OR OTHER APPROVED MATERIAL.
2. BATCH MEASUREMENT EQUIPMENT (BALANCES, SCALES, ETC.) SHALL BE CAPABLE OF CONFORMANCE TO THE SPECIFICATIONS IN SECTION I.A.1. OF THIS DOCUMENT.
 - a. MEASUREMENT EQUIPMENT SHALL BE ROUTINELY CALIBRATED, INSPECTED, AND CHECKED ACCORDING TO WRITTEN PROCEDURES TO ASSURE MANUFACTURING SPECIFICATIONS ARE MET.

B. MANUFACTURING MATERIALS

1. USE OF THE MANUFACTURING MATERIAL SHALL BE DOCUMENTED ON THE BATCH HISTORY RECORD.

II. PROCESS SPECIFICATIONS

THE MANUFACTURING PROCESS SHALL FOLLOW THE SEQUENCE OF OPERATIONS AS OUTLINED IN THE FOLLOWING PROCESS FLOW CHART:

A. SETUP

1. CHECK COMPRESSED GAS TANKS (LOCATED ON OUTSIDE WALL OF LAB) FOR A MINIMUM OF 500 P.S.I. IN EACH. FLOW PRESSURE SHOULD BE 40 ± 5 P.S.I. FOR EACH TANK. THE LIQUID NITROGEN TANK SHOULD BE NO LESS THAN 1/2 EMPTY.
2. VERIFY THAT THE EQUIPMENT IS CLEAN AND DRY.
3. CALCULATE THE BATCH QUANTITIES AND TOLERANCES IN ACCORDANCE WITH VALUES GIVEN IN THE MANUFACTURING DOCUMENT AND WEIGH OUT EACH OF THE FLUORS.
4. ADD FLUORS TO APPROPRIATE SIZE VOLUMETRIC FLASK. Q.S. WITH REQUIRED AMOUNT OF SOLVENT. STIR WITH TEFLON STIR BAR UNTIL FLUORS ARE IN SOLUTION.

*NOTE: ONLY ADD SOLVENT TO THE VOLUMETRICS AS THEY ARE BEING USED. DO NOT SAVE UNUSED COCKTAIL.

5. AFTER PLACING COCKTAILS IN FUME HOOD, ADD THE APPROPRIATE AMOUNT OF RADIOACTIVE MATERIAL TO THE VOLUMETRIC FLASKS AND STIR FOR APPROXIMATELY 5 MIN.

B
DWG. NO.

QTY	ITEM	PART NO.	DESCRIPTION
DR	SJB	2781	BECKMAN INSTRUCTION ASSY, FILLING PROCEDURE FOR SEALED STANDARDS
CHK			
DSGN			
ENGR			
APPD			
		B	CODE IDENT. NO.
		SIZE	DWG NO
		05721	007 — 605295-80
		SCALE	INIT USE SHEET 1 OF 3

6. AT THIS POINT, IT WILL BE NECESSARY TO SET UP THE BUBBLING MANIFOLD. THIS IS DONE BY PLACING CLEAN PASTEUR PIPETS IN THE TYGON HOLDERS OF THE MINI MANIFOLD. AFTER THIS IS COMPLETED, THE MANIFOLD IS THEN PLACED INSIDE THE GLOVE BOX AND ATTACHED TO THE CLAMP HOLDER ON RING STAND.

*NOTE: CHANGE PASTEUR PIPETS AFTER EACH ISOTOPE.

7. PLACE THE FOLLOWING ITEMS IN THE GLOVE BOX PRIOR TO STARTING THE FILL. EXTRA VIALS (MINI) APPROPRIATE FLASK OF COCKTAIL AND ISOTOPE, RUBBER SEPTUM SEALS, AUTOMATIC DISPENSER, EXTRA PASTEUR PIPETS, LIQUID WASTE CONTAINER, AND 2 - 4 RACKS OF APPROPRIATE VIALS.

*NOTE: BEFORE PLACING MINI/MAXI VIALS IN GLOVE BOX, MEASURE THE VIAL HEIGHT OF 3 - 5 RANDOM VIALS. HEIGHT SHOULD BE 100 MM (3.9 IN.) OVERALL, BOTTOM OF NECK TO BOTTOM OF VIAL MINIMUM 1.75 IN. ALSO CHECK FOR DEBRIS SUCH AS CARDBOARD, DIRT, CRACKS, ETC.

B. FILLING PROCESS

1. CLOSE OUTSIDE DOOR ON GLOVE BOX AND LATCH DOOR SECURELY. LEAVE DOOR CLOSED UNTIL FULL PROCESS IS COMPLETE.
2. FILL DEWAR (LOCATED UNDER GLOVE BOX DOOR) WITH LIQUID NITROGEN TO TRAP GASES FROM GLOVE BOX. THIS IS NECESSARY TO KEEP THE LAB AND PERSONNEL FROM POSSIBLE CONTAMINATION OF RADIOACTIVE VAPORS. THE DEWAR SHOULD BE KEPT FULL OF LIQUID NITROGEN WHILE VACUUM PUMP IS IN OPERATION.
3. TURN VACUUM PUMP AND NITROGEN GAS LINE ON AT THE SAME TIME. THE VALVES INSIDE THE GLOVE BOX SHOULD BE PRE-SET. IF SO, THE GLOVES WILL HANG LIMP. IF NOT (I.E., GLOVES OVERINFLATE, OR ARE DRAWN INTO BOX), SHUT OFF BOTH NITROGEN VALVES INSIDE BOX. OPEN ONLY THE VALVE THAT FEEDS THE INSIDE OF THE GLOVE BOX APPROXIMATELY 1/4 - 1/2 TURN, OR UNTIL GLOVES HANG LIMP. LET STAND FOR APPROXIMATELY 15 MIN.
4. FILL MINI VIAL WITH 4 mL OF COCKTAIL FROM AUTOMATIC DISPENSER. AVOID DISPENSING COCKTAIL ONTO NECK OF VIAL AS THIS WILL CAUSE CHARRING DURING SEALING.
5. AFTER ALL VIALS HAVE BEEN FILLED, CHECK TO MAKE SURE THE NITROGEN TO MANIFOLD IS SHUT OFF. PICK UP THE RACK OF VIALS AND MANEUVER IT SO THAT THE PIPETS ARE INSERTED INTO VIALS. LOWER BOTH THE MANIFOLD AND RACK DOWN, AND SECURE THE MANIFOLD SO THAT THE PIPET TIPS ARE 1/2 - 3/4 WAY INTO COCKTAIL. IF A PIPET SHOULD BREAK OFF INTO THE VIAL, DISCARD THE VIAL AND REPLACE BOTH THE PIPET AND VIAL. THE NITROGEN FLOW RATE SHOULD BE SUCH THAT THE COCKTAIL DOES NOT SPLASH ONTO THE NECK OF THE VIAL. FLUSH SOLUTION FOR 10 SECONDS (+5, -5 SECONDS).
6. RAISE THE MANIFOLD UP AND STOPPER THE TOP OF THE VIALS WITH A TIGHT FITTING RUBBER SEPTUM SEAL AND SNAP DOWN OVER TOP OF VIAL NECK.
7. IT IS RECOMMENDED THAT AFTER ONE RACK OF VIALS IS COMPLETE THEY BE BROUGHT OUT SEALED, CAPPED AND COUNTED TO DETERMINE IF ANY PROBLEMS EXIST (I.E., LACK OF QUENCH, PROPER D.P.M., ETC.)
8. REPEAT PROCESSES 1 - 7 UNTIL ALL VIALS HAVE BEEN PREPARED.

C. SEALING PROCESS

1. SHUT OFF VACUUM PUMP AND NITROGEN AND UNLATCH GLOVE BOX DOOR.
2. REMOVE RACKS TO BE SEALED AND DO NOT DISTURB SEAL. PLACE RACKS IN FUME HOOD NEXT TO SEALING TORCH.
3. FILL THE TWO SMALL DEWARS WITH LIQUID NITROGEN. TURN ON THE GAS ON THE TORCH (RED KNOB) FIRST AND LIGHT THE TORCH. USE THE OXYGEN (GREEN KNOB) TO ADJUST FLAME SO THAT THE INNER BLUE FLAME IS APPROXIMATELY 1/8 - 1/4 IN. IN LENGTH.

*NOTE: ALWAYS TURN GAS (RED KNOB) OFF FIRST.

4. IF NECESSARY TO COOL BEFORE FLAME SEALING, PLACE ONE VIAL AT A TIME IN THE SMALLER OF THE TWO DEWARS (USE LARGER DEWAR FOR REFILLING LIQUID NITROGEN IN SMALLER DEWAR). COOL THE VIAL FOR APPROXIMATELY 10 SECONDS.
5. IF NECESSARY TO COOL, WHILE WEARING PROTECTIVE LEATHER GLOVES, REMOVE THE VIAL FROM THE LIQUID NITROGEN. WHILE PASSING THE VIAL NECK BACK AND FORTH THROUGH THE FLAME, ROTATE THE VIAL EVENLY. AS THE GLASS BECOMES SOFT, TWIST AND PULL THE NECK FROM THE VIAL. POLISH ANY SHARP SURFACES ON THE VIAL TOP AND DISCARD THE VIAL NECK IN THE APPROPRIATE WASTE RECEPTACLE AFTER REMOVING RUBBER SEPTUM.

*NOTE: CHECK VIAL TOP WITH APPROPRIATE CAP TO ENSURE THE GLASS DOES NOT TOUCH THE TOP OF THE CAP. IF SO, SLIGHTLY HEAT THE VIAL TOP AND TAP DOWN WITH CAP.

6. IF VIALS WERE COOLED, ALLOW VIALS TO WARM UP TO ROOM TEMPERATURE. USING A FEW SHEETS OF TISSUE, INVERT THE VIALS AND LIGHTLY WIPE THE TOP, CHECKING FOR LEAKS. DISCARD ALL LEAKING VIALS. WIPE ALL VIALS OF EXCESS CONDENSATION BEFORE PAINTING TOP.
7. USING A THIN PIECE OF SCOTCH TAPE, TAPE A CAP TO THE VIAL SO THAT IT MAY BE COUNTED. LAY THE VIAL ON ITS SIDE AND ROLL ACROSS A FLAT SURFACE (I.E., DESK TOP, TABLE TOP, ETC.) TO CHECK CAP ALIGNMENT. MAKE NECESSARY ADJUSTMENTS BY MOVING CAP TO ONE SIDE OR THE OTHER.

*NOTE: CAPS SHOULD CONFORM TO SPECS AS OUTLINED IN DOCUMENT 597727.

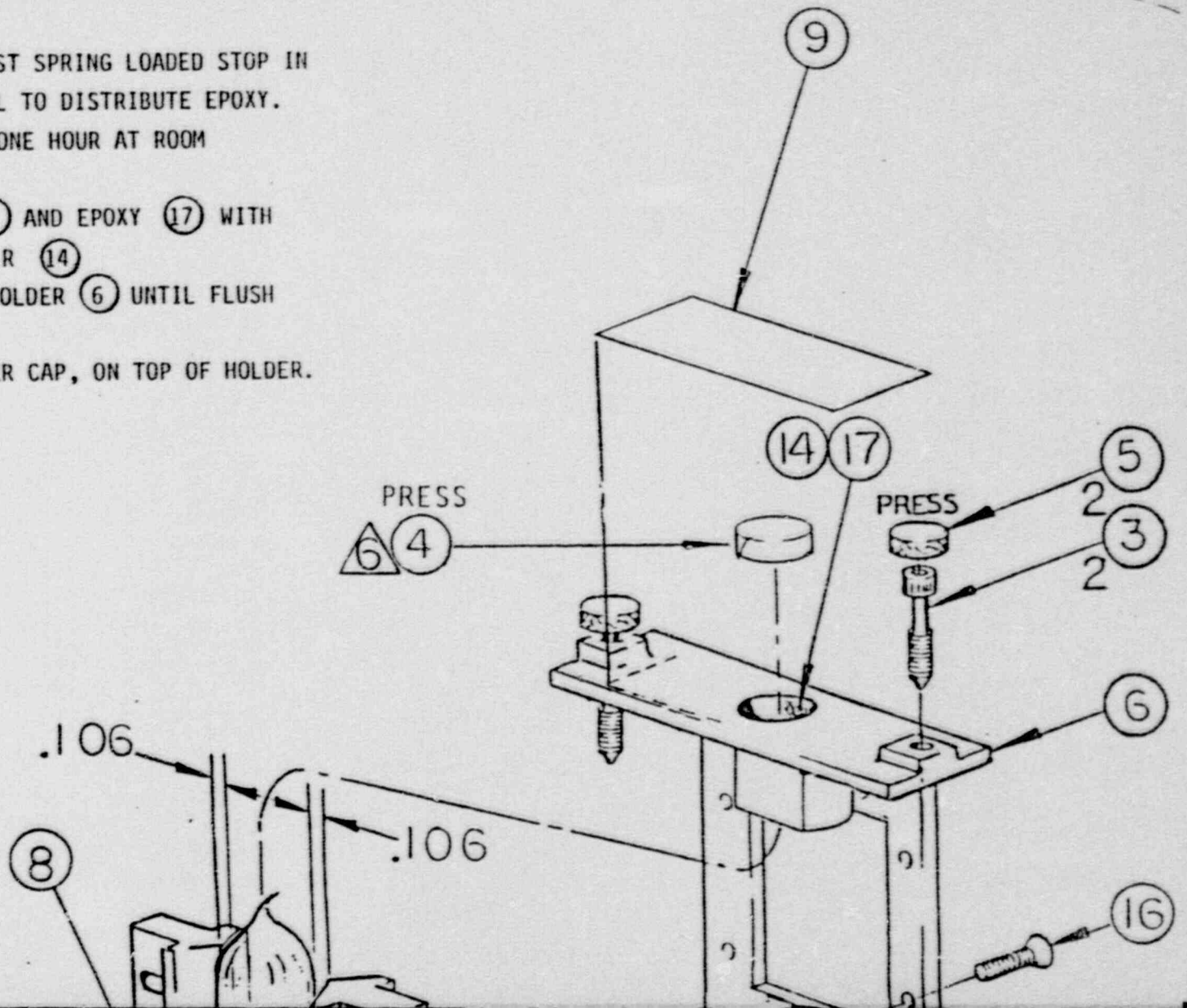
8. USING A LAB MARKER, HAND WRITE ISOTOPE AND D.P.M. ON TOP OF CAP. STORE VIALS IN L.S. RACKS UNTIL READY TO COUNT.
9. SWAB VIALS (ONE RACK PER SWAB). COUNT IN 10-ML COCKTAIL SOLUTION (PREFERABLY HP/b). IF HIGH ACTIVITY (I.E., 150 C.P.M.) IS DETECTED, RESWAB RACK TO DETERMINE WHICH INDIVIDUAL VIAL HAS HIGH COUNTS.
10. COUNT IN AN L.S. COUNTER ACCORDING TO 605295-S1 TO DETERMINE DPM AND H#.

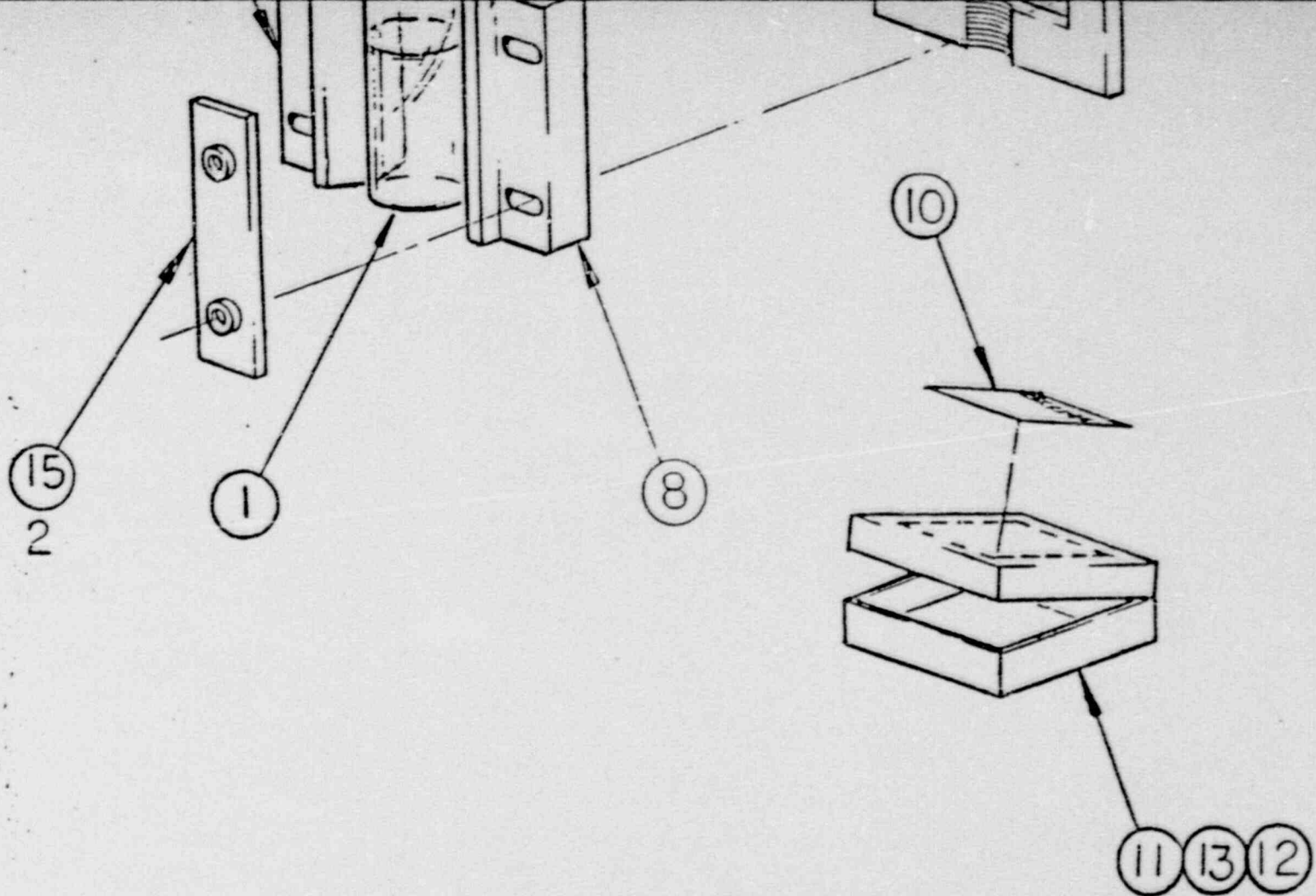
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CHG	EO NO	DATE	BY	CHK

ASSY INSTRUCTIONS

1. PLACE VIAL (1) AND WEDGES (8) IN POSITION USING ASSEMBLY FIXTURE AND TIGHTEN SCREWS (16) INTO NUT PLATES (15).
2. STAND FIXTURE AND ASSEMBLY UPRIGHT AND ADD EPOXY (17) THROUGH ACCESS HOLE IN TOP OF HOLDER (6).
3. PULL BACK VIAL AGAINST SPRING LOADED STOP IN FIXTURE AND SPIN VIAL TO DISTRIBUTE EPOXY.
4. ALLOW EPOXY TO CURE ONE HOUR AT ROOM TEMPERATURE.
5. PAINT TOP OF VIAL (1) AND EPOXY (17) WITH WHITE LIQUID PAPER (14).
6. PRESS CAP (4) INTO HOLDER (6) UNTIL FLUSH WITH TOP OF HOLDER.
7. ATTACH LABEL (9) OVER CAP, ON TOP OF HOLDER.





SIZE B
 DWG. NO. 010-523927-80

Also Available On
 Aperture Card
 SI
 APERTURE
 CARD

QTY	ITEM	PART NO.	DESCRIPTION
	DR HARLAN	3/87	BECKMAN TITLE INST - ASSY, CALIBRATION CELL
	CHK		
	DSGN		
	ENGR		
	APPD		
		B SIZE	CODE IDENT NO 05721
			DWG NO. 010 - 523927-80
		SCALE -	INIT USEELS SHEET 1 OF 1

X04917.2

9001120120-01

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CHG	EO NO	DATE	BY	CHK

<u>QTY</u>	<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	605295	UNQUENCHED CALIBRATION VIAL -(PXE)
	2		
2	3	523930	SCREW, CAPTIVE - SHORT
1	4		CAP - TOP
2	5	883756	KNOB #8, SCREW
1	6		HOLDER, MODIFIED
	7		
2	8		WEDGE
1	9	231221	LABEL, CELL
1	10	453309	LABEL, BOX
1	11	945613	BOX, PLASTIC 2 X 5 1/8 X 7 1/8
1	12	246806	INFORMATION, CALIBRATION
1	13	523955	INSERT, FOAM (SET OF 2 PIECES)
	14		WHITE LIQUID PAPER
2	15		PLATE, NUT
4	16	803156	SCREW, #6-32, FLAT HD X .625
A/R	17	60-016-19	EPOXY, HARDMAN CLEAR
1	--	534117	ASSY, SHIPPING CALIBRATION CELL
INF	--	523927-31	TEST PROCEDURE
INF	--	523927-34	Q.A. PROCEDURE
INF	--	523927-80	ASSY, INSTRUCTIONS

SI
 APERTURE
 CARD
 Also Available On
 Aperture Card

QTY	ITEM	PART NO.	DESCRIPTION									
DR	SJB	3/86	BECKMAN TITLE CALIBRATION ASSY									
CHK												
DSGN												
ENGR	SHOPE	3/86										
APPD	WINN	3/86										
			<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">B</td> <td>CODE IDENT NO.</td> <td>DWG NO.</td> </tr> <tr> <td>SIZE</td> <td style="text-align: center;">05721</td> <td style="text-align: center;">449 — 523927</td> </tr> <tr> <td>SCALE</td> <td>INIT USE 171</td> <td>SHEET 1 OF 1</td> </tr> </table>	B	CODE IDENT NO.	DWG NO.	SIZE	05721	449 — 523927	SCALE	INIT USE 171	SHEET 1 OF 1
B	CODE IDENT NO.	DWG NO.										
SIZE	05721	449 — 523927										
SCALE	INIT USE 171	SHEET 1 OF 1										

9001120120-02