



U.S. Department
of Transportation

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE USA/0336/S-96, REVISION 10

Pipeline and
Hazardous Materials
Safety Administration

This certifies that the sources described have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency¹ and United States of America² for the transport of radioactive material.

1. Source Identification - Eckert & Ziegler Isotope Products (EZIP) Model Nos. XFB-3 and XFB-4.
2. Source Description - Both sources are a cylindrical disk single encapsulation constructed of Monel (Model No. XFB-3) or Type 304 or 304L stainless steel with fusion welds and a brazed-in-place beryllium window at one end. Approximate outer dimensions of the Model No. XFB-3 are 7.9 mm (0.312 in.) in diameter and 5.1 mm (0.2 in.) thick. Approximate outer dimensions of the Model No. XFB-4 are 10.8 mm (0.425 in.) in diameter and 5.0 mm (0.197 in.) thick. Construction of the Model No. XFB-3 shall be in accordance with attached EZIP Drawing Nos. 3204, Rev. M, Sheets 5 and 6 of 12; or 3205, Rev. N, Sheet 6 of 11. Construction of the Model No. XFB-4 shall be in accordance with attached EZIP Drawing No. 3233, Rev. A, Sheet 3 of 10.
3. Radioactive Contents - Each source described by this certificate is authorized to contain any one of the following radionuclides limited to the activity shown. The radionuclides are in the form of chlorides, nitrates, or oxides in ceramic; oxides in gold or aluminum; or metal plated onto substrate.

<u>Radionuclide</u>	<u>Activity MBq (mCi)</u>	
Na-22	185	(5)
Fe-55	11,100	(300)
Co-57	11,100	(300)
Co-58	11,100	(300)
Co-60	370	(10)
Ge-68	1,850	(50)
Sr-90	4,625	(125)
Ru-106	1,850	(50)
Cd-109	11,100	(300)
Ba-133	3,700	(100)
Cs-137	11,100	(300)
Gd-153	55,500	(1,500)
Ra-226	1,850	(50)
Lanthanides*	18,500	(500)
Actinides**	11,100	(300)

* (Isotopes of Ce, Pr, Sm, Eu, Gd, Tm, and Yb only)

** (Isotopes of Ac, Th, Pa, U, Np, Pu, Am, and Cm only)

¹ "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

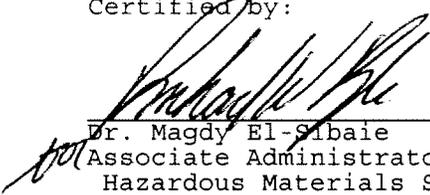
² Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

CERTIFICATE USA/0336/S-96, REVISION 10

4. Quality Assurance - Records of Quality Assurance activities required by paragraph 310 of the IAEA regulations¹ shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.
5. Expiration Date - This certificate expires on April 30, 2016.

This certificate is issued in accordance with paragraph 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the February 11, 2011 petition by Eckert & Ziegler Isotope Products, Valencia, CA, and in consideration of other information on file in this Office.

Certified by:

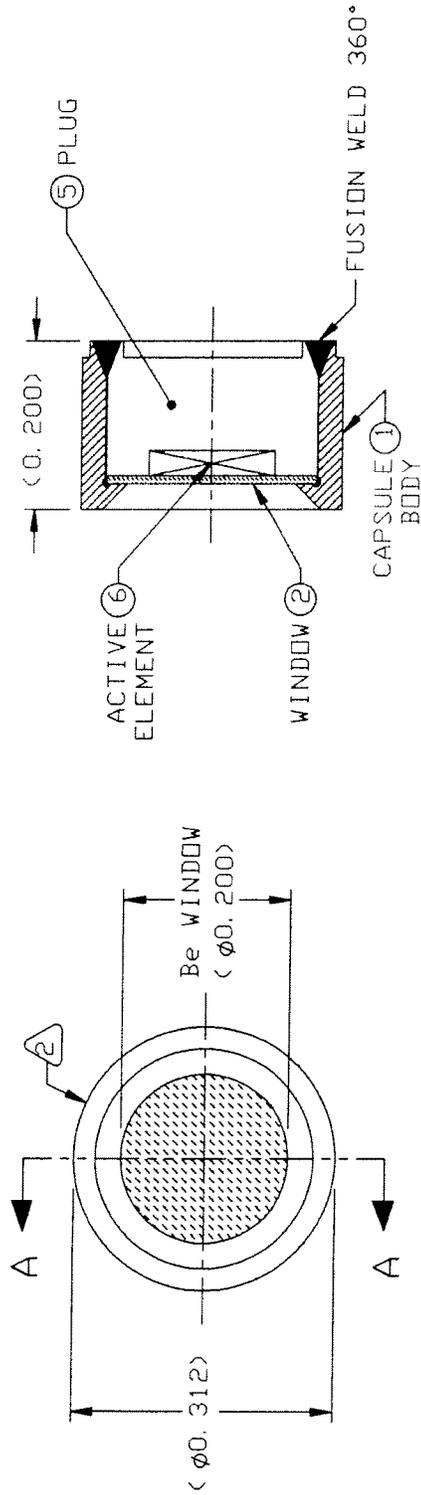


Dr. Magdy El-Sibaie
Associate Administrator for
Hazardous Materials Safety

APR 26 2011

(DATE)

Revision 10 - Issued to update corporate name, drawings, and radioactive contents, add monel as a material used for capsule construction, and to extend the expiration date.



SECTION A-A

2. REFER TO DETAIL DRAWING FOR ENGRAVING

- ASSEMBLE COMPLETE PER ENGINEERING DRAWING BRAZE OR FUSION WELD AS REQUIRED.

NOTES: UNLESS OTHERWISE SPECIFIED (CONTINUED ON SHEET 6)

SEE NEXT SHEET FOR ASSEMBLY DASH NUMBER

A3204-X

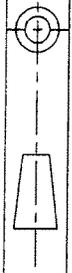
ASSEMBLY

Eckert & Ziegler
Isotope Products
 Valencina, California 91355

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ON		ANGLE
FRAC-TION	DECIMAL	XXX
±1/64	±.1	.002 ±.5°

THIRD ANGLE PROJECTION



DRAWING TITLE
 MODEL 3204 XFB-3 SOURCE

SERIES TITLE
 GFS & XFB SOURCES (PHI & BFI)

CAGE CODE	REVISION	DRAWING NUMBER	SHEET
32993	M	3204	5 OF 12

THIS DRAWING IS THE PROPERTY OF ECKERT & ZIEGLER ISOTOPE PRODUCTS AND MAY NOT BE USED, REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS WITHOUT EXPRESS AUTHORIZATION BY ECKERT & ZIEGLER ISOTOPE PRODUCTS.

TABLE		ACTIVE ELEMENT AND SIZE	
X	MATERIAL	FOIL, Ag, UNTHREADED PLUG	FOIL, Ni
0	304 SST	CANE, 0.125 DIA x 0.030 THK	CANE, 0.187 DIA x 0.020 THK
1	304 SST	CANE, 0.210 DIA x 0.040 THK	FOIL, Ag, THREADED PLUG
2	304 SST	FOIL, Pt CLAD Ni	FOIL, Ag
3	304 SST	FOIL, Ni	FOIL, Ni
4	304 SST	CANE, 0.125 DIA x 0.030 THK	CANE, 0.187 DIA x 0.020 THK
5	304 SST	CANE, 0.210 DIA x 0.040 THK	CANE, 0.187 DIA x 0.020 THK
6	304 SST	FOIL, Pt CLAD Ni	FOIL, Ag
10	MONEL	FOIL, Ni	FOIL, Ni
11	MONEL	CANE, 0.125 DIA x 0.030 THK	CANE, 0.187 DIA x 0.020 THK
12	MONEL	CANE, 0.210 DIA x 0.040 THK	CANE, 0.187 DIA x 0.020 THK
13	MONEL	FOIL, Pt CLAD Ni	FOIL, Ag
14	MONEL	FOIL, Ni	FOIL, Ni

NOTES: UNLESS OTHERWISE SPECIFIED (CONTINUED FROM SHEET 5)

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	TOLERANCES ON		DESIGN	SCALE
FRAC- TION	DECIMAL	XXX	JMD/RLT	NONE
±1/64	±.1	.01	XXX	SIZE
		.002	ANGLE	A
		±.5°		
CAGE CODE			REVISION	DRAWING NUMBER
32993			M	3204
SHEET			6 OF 12	

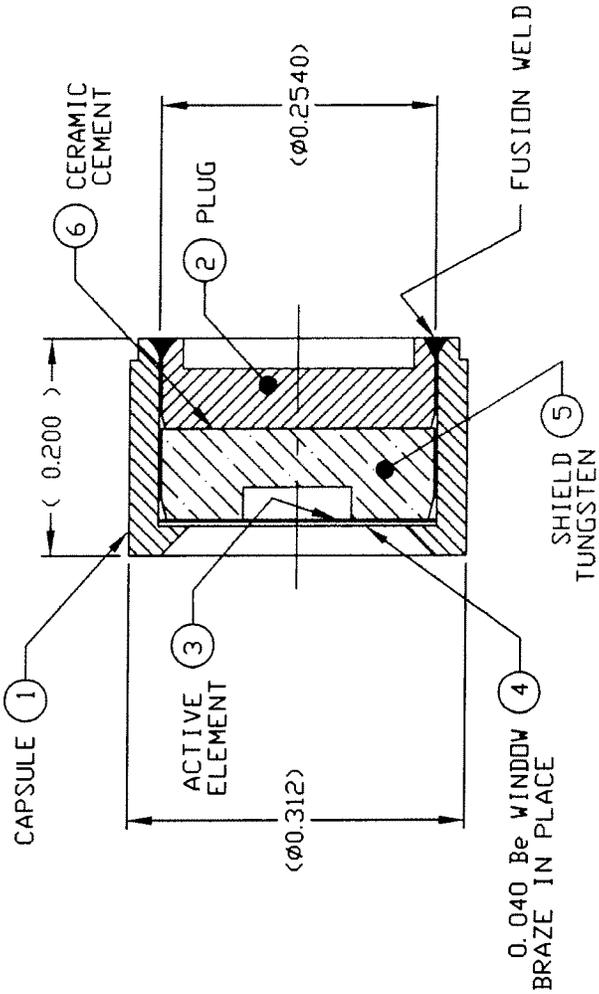
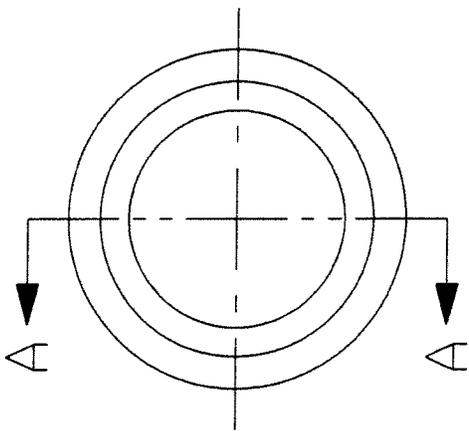


TABLE X

X	MATERIAL
0	304 or 304L STAINLESS STEEL
1	MONEL

SECTION A-A

TABLE Y

Y	ACTIVE ELEMENT AND DIMENSIONS
0	FOIL, 0.250 DIA x 0.005 THICK
1	CANE, 0.125 DIA x 0.030 THICK
2	CANE, 0.187 DIA x 0.020 THICK
3	CANE, 0.210 DIA x 0.040 THICK
4	CANE, 0.250 DIA x 0.040 THICK
5	CANE, 0.187 DIA x 0.040 THICK

- INDIVIDUALLY PACKAGE AND IDENTIFY PART NUMBER THEREON
 - ASSEMBLE COMPLETE PER ENGINEERING DRAWING AND BRAZE OR FUSION WELD AS REQUIRED
- NOTE: UNLESS OTHERWISE SPECIFIED

P/N: A3205-XY ASSEMBLY

Eckert & Ziegler
Isotope Products
 Valencia, California 91355

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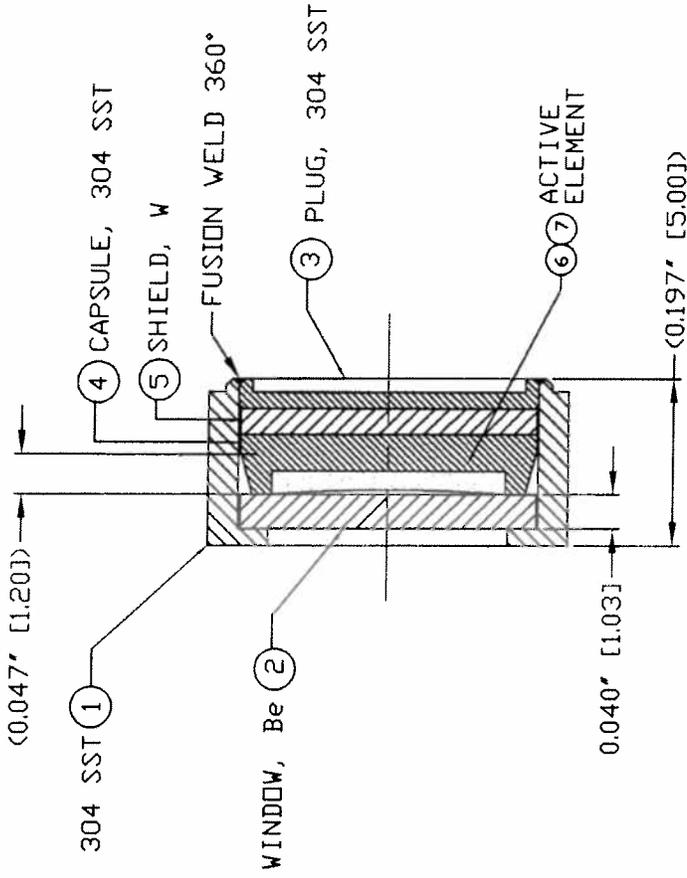
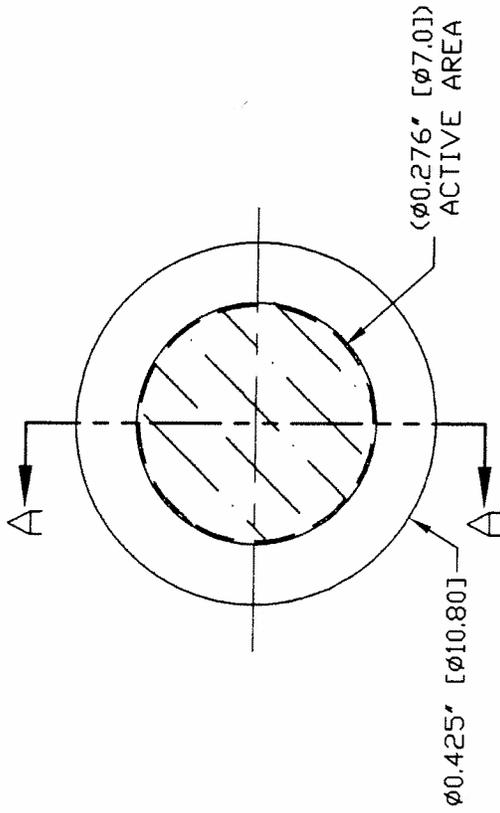
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

FRAC-TION	DECIMAL	ANGLE
$\pm 1/64$	$\pm .01$	$\pm 5^\circ$

THIRD ANGLE PROJECTION

DESIGN EZ/DI	SCALE	SIZE
MODEL XFB-3 CAPSULE WITH TUNGSTEN SHIELD	NONE	A

DRAWING TITLE	CAGE CODE	REVISION	DRAWING NUMBER	SHEET
SERIES TITLE INDUSTRIAL SOURCES, GFS AND XFB	32993	N	3205	6 OF 11



SECTION A-A

P/N A3233 ASSEMBLY

4. PACKAGE AND IDENTIFY PART NUMBER THEREON.
 3. METRIC DIMENSIONS [mm] ARE IN MILLIMETERS
 2. FUSION WELD AS REQUIRED.
 1. ASSEMBLE COMPLETE PER ENGINEERING DRAWING
- NOTES: UNLESS OTHERWISE SPECIFIED


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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES	
TOLERANCES	(UNLESS OTHERWISE SPECIFIED)
XXXX ± .002 INCH	
XXX ± .01 INCH	
XX ± .1 INCH	ANGULAR TOLERANCE OF 0°±30'
ALL DIMENSIONS ARE FINISHED DIMENSIONS	
THIRD ANGLE PROJECTION	
	

DRAWN	DI	24 JUN02
WE/CHECKER	KP	24 JUN02
ENGR	EZ	24 JUN02
SCALE	NONE	SIZE
		A

TITLE	
CESIO XFB SOURCE	
DRAWING NO.	REV
3233	A
SERIES TITLE	
INDUSTRIAL SOURCES, GFS AND XFB	
SHEET	
3 OF 10	



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1200 New Jersey Avenue SE
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**Pipeline and
Hazardous Materials
Safety Administration**

CERTIFICATE NUMBER: USA/0336/S-96, Revision 10

ORIGINAL REGISTRANT(S):

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Valencia, 91355
USA

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