



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

East Building, PHH-23
1200 New Jersey Ave, SE
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS

CERTIFICATE USA/0515/S-96, REVISION 5

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 the United States of America² for the transport of radioactive material.

1. Source Identification - Eckert & Ziegler Isotope Products source capsule Models 3201, 3202, and 3210.
2. Source Description - Cylindrical single encapsulations made of Type 304 or 304L stainless steel, with a 0.25 mm (0.010 in.) thick integral window at one end, and fusion seal welded. Approximate outer dimensions of the Models 3201 and 3202 are 7.9 mm (0.312 in.) in diameter and 5.1 mm (0.200 in.) in length. Approximate outer dimensions of the Model 3210 are 8.0 mm (0.313 in.) in diameter and 5.1 mm (0.200 in.) in length. Construction shall be in accordance with attached Eckert & Ziegler Isotope Products Drawing Nos. 3201, Rev. I, Sheet 4 of 8; 3202, Rev. I, Sheet 5 of 8; or Isotope Products Laboratories Drawing No. 3210, Rev. -, Sheet 1 of 1.
3. Radioactive Contents - The sources described by this certificate are 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. The Na-22 may also be in the form of NaCl in gold or ceramic. The Ge-68 may also be in the form of GeO₂ in silver. The Sr-90 may also be in the form of SrTiO₄ in silver. The Ba-133 may also be in the form of BaSO₄ in ceramic.

¹ "Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6" 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/0515/S-96, REVISION 5

<u>Radionuclide</u>	<u>Activity MBq (mCi)</u>	
Na-22	185	(5)
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)
Ba-133	3,700	(100)
Cs-137	11,100	(300)
Ra-226	1,850	(50)
Lanthanides*	11,100	(300)
Actinides**	11,100	(300)

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

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

4. Management System Activities - Records of Management System activities required by Paragraph 306 of the IAEA regulations 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 December 31, 2025. Previous editions which have not reached their expiration date may continue to be used.

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This certificate is issued in accordance with paragraph(s) 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the November 13, 2020 petition by Eckert & Ziegler Isotope Products, Valencia, CA, and in consideration of other information on file in this Office.

Certified By:

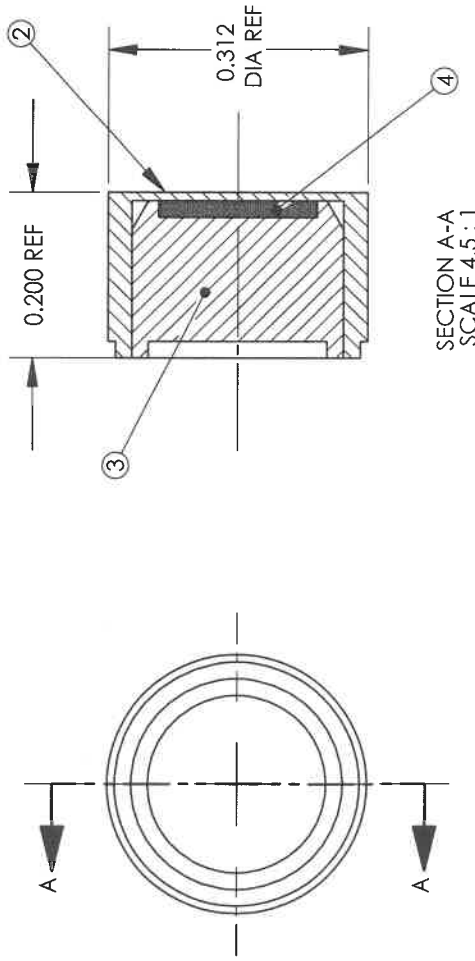


December 09, 2020

(DATE)

 William Schoonover
Associate Administrator for Hazardous
Materials Safety

Revision 5 - Issued to extend the expiration date and to update the drawing.



X	ACTIVE ELEMENT SIZE
0	FOIL, 0.250" DIA X 0.005"
1	0.125" DIA X 0.030"
2	0.187" DIA X 0.020"
3	0.210" DIA X 0.040"
4	0.250" DIA X 0.040"
5	0.210" DIA X 0.080"

A3201-X CAPSULE ASSEMBLY

SECTION A-A
SCALE 4.5 : 1

2. PACKAGE AND IDENTIFY PART NUMBER THEREON
 1. ASSEMBLE COMPLETE PER ENGINEERING DRAWING AND FUSION WELD AS REQUIRED.
 NOTES: UNLESS OTHERWISE SPECIFIED

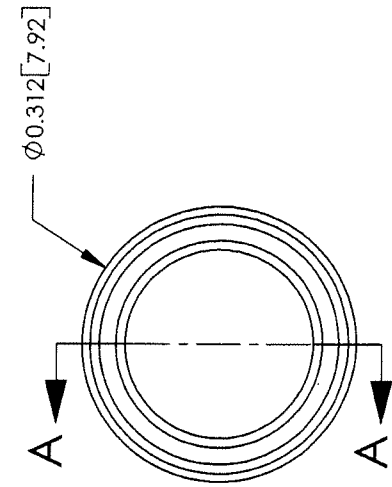
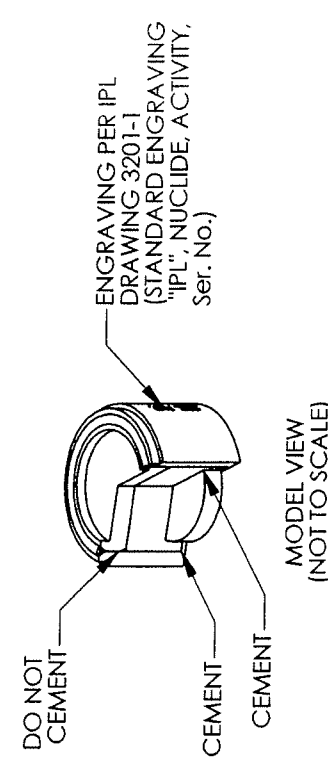
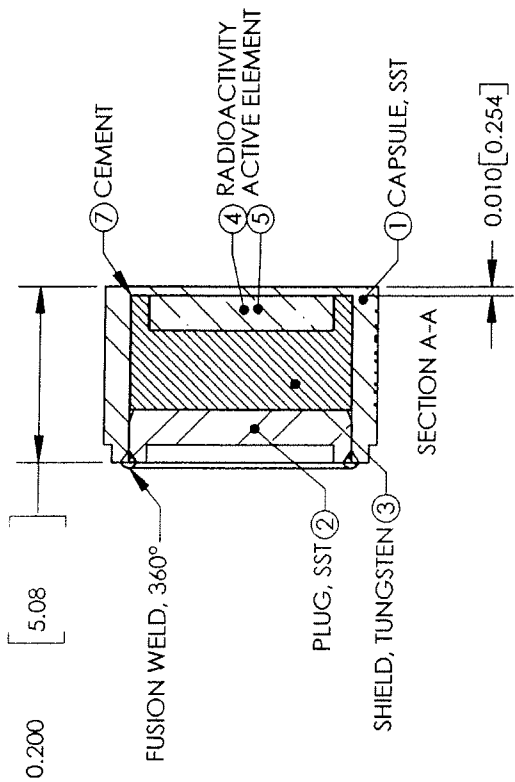
Eckert & Ziegler
Isotope Products
 VALENCIA, CALIFORNIA 91355

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.	
TOLERANCES	(UNLESS OTHERWISE SPECIFIED)
X.XXX ± .002 INCH	ANGULAR TOLERANCE OF 0°±30"
X.XX ± .005 INCH	FRACTIONAL DIMENSIONS ± 1/32"
X.X ± .03 INCH	REFERENCE DIMENSIONS (I) N/A
X. ± .1 INCH	SURFACE ROUGHNESS INCH MAX
ALL DIMENSIONS ARE FINISHED DIMENSIONS	
THIRD ANGLE PROJECTION	

DRAWN	ME/CHECKER	SCALE	SIZE
KP	EZ	NONE	A
ENGINEER		DRAWING NO.	
EZ		3201	

TITLE		MODEL 3201 PHOTON SOURCE	
SERIES TITLE		GFS AND XFB SOURCES (PHI & BFI)	
CAGE CODE	DRAWING NO.	REV	SHEET
32993	3201	I	4 OF 8



1. ASSEMBLE PER ENGINEERING DRAWING
 NOTES: UNLESS OTHERWISE SPECIFIED

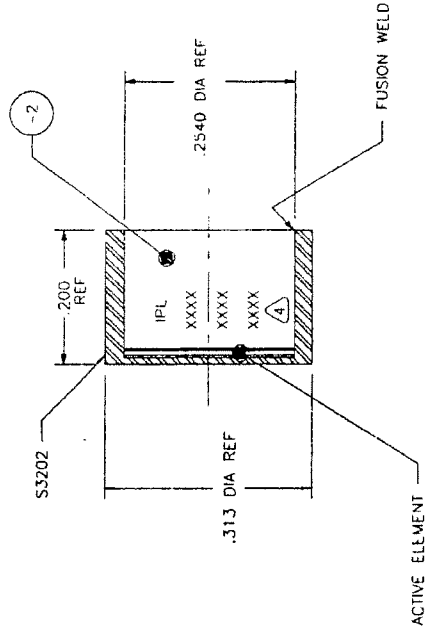
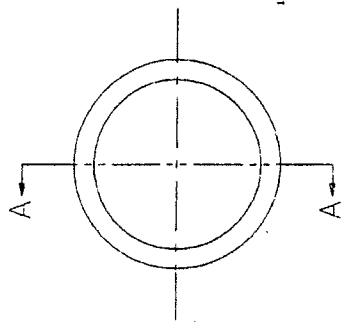
Eckert & Ziegler
 Isotope Products
 Valencia, California 91355

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES; METRIC UNITS (mm) ARE IN MILLIMETERS.	
TOLERANCES	(UNLESS OTHERWISE SPECIFIED)
X.XXX ± .002	INCH ANGULAR TOLERANCE OF 0°±30'
X.XX ± .005	INCH FRACTIONAL DIMENSIONS ± 1/32"
X.X ± .03	INCH REFERENCE DIMENSIONS (I) N/A
X. ± .1	INCH SURFACE ROUGHNESS μINCH MAX
ALL DIMENSIONS ARE FINISHED DIMENSIONS	
THIRD ANGLE PROJECTION	

DRAWN	RLT
ME/CHECKER	EW
ENGINEER	JMD
SCALE	NONE
SIZE	A

TITLE		MODEL GFS-3 PHOTON SOURCE	
SERIES TITLE		GFS AND XFB SOURCES (PHI & BFI)	
CAGE CODE	DRAWING NO.	REV	SHEET
32993	3202	I	5 OF 8



3210 CAPSULE ASSEMBLY

SECTION A--A

ISOTOPE PRODUCTS LABORATORIES
BURBANK, CALIFORNIA 91504

SCALE: NTS	DESIGNED: DFB/RLT
DATE: 09/17/93	REV/DWG: -
TITLE: CAPSULE ASSEMBLY, IPL MODEL GFS-3 WITH .010 WINDOW - PHOTON SOURCE	SHEET: 1 OF 1
SERIES: SERIES 3200 CAPSULE GFS & XFB SOURCES	DRAWING NUMBER 3210



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CERTIFICATE NUMBER: USA/0515/S-96

ORIGINAL REGISTRANT(S) :

Eckert & Ziegler Isotope Products
24937 Avenue Tibbitts
Valencia, CA, 91355
USA

Halliburton
3000 North Sam Houston Parkway, East
Houston, TX, 77032
USA