



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/0508/S-96, REVISION 5

This certifies that the source described has 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 (EZIP) Model A3906.
2. Source Description - Cylindrical single IPL Model HEG-1 encapsulation constructed of Type 304 or 304L stainless steel and fusion seal welded. Approximate outer dimensions are 4.7 mm (0.186 in.) in diameter and 5.7 mm (0.225 in.) in length. The Model HEG-1 is in a cylindrical holder with a hexagonal extension made of Type 316L stainless steel and fusion welded. Approximate outer dimensions of the holder are 38.1 mm (1.5 in.) in length, 6.35 mm (0.25 in.) in diameter in the cylindrical section and 9.53 mm (0.375 in.) across the flats of the hexagonal section. Construction shall be in accordance with attached IPL Drawing No. 3906, Sheet 3 of 5, Rev. G.
3. Radioactive Contents -

| Radionuclide | Form | Activity GBq (Ci) |
|--------------|--|-------------------|
| Na -22 | NaCl in gold or ceramic | 3.7 (0.10) |
| Co - 57 | CoO, CoCl ₂ Co(NO ₃) ₂ in ceramic | 11.1 (0.30) |
| Co - 58 | CoO, CoCl ₂ Co(NO ₃) ₂ in ceramic | 11.1 (0.30) |
| Co - 60 | CoO, CoCl ₂ Co(NO ₃) ₂ in ceramic or | 11.1 (0.30) |

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.

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| | | |
|------------|--|---------------|
| | Co pellets | |
| Ge - 68 | GeCl ₄ in ceramic | 1.85 (0.05) |
| Ba - 133 | BaSO ₄ or BaCl ₂ in gold or ceramic | 3.7 (0.10) |
| Cs - 137 | CsCl, Cs ₂ SO ₄ or CsNO ₃ in ceramic, AL or Au pellets | 11.1 (0.30) |
| Ra - 226 | RaSO ₄ in gold or ceramic | 1.85 (0.05) |
| Cf - 252 | Oxide in metal or ceramic | 0.037 (0.001) |
| Actinides* | Oxides in gold or ceramic | 1.85 (0.05) |

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

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 January 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 December 24, 2019 petition by Eckert & Ziegler Isotope Products, Valencia, CA, and in consideration of other information on file in this Office.

Certified By:

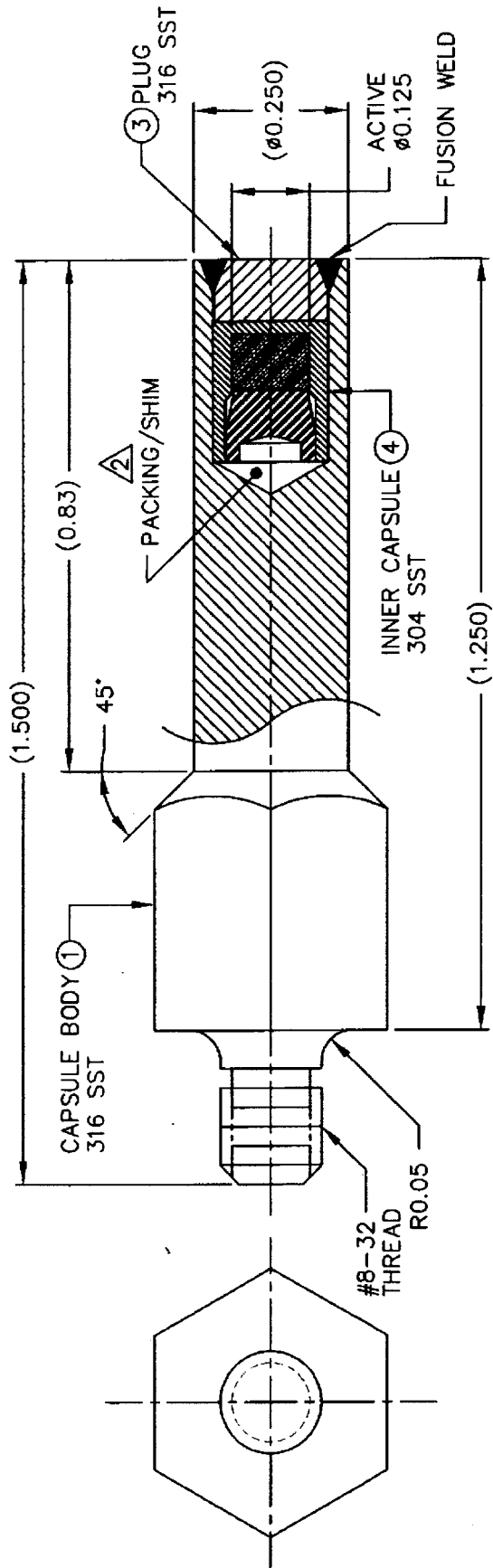


February 03, 2020

(DATE)

 William Schoonover
Associate Administrator for Hazardous
Materials Safety

Revision 5 - Issued to extend the expiration date.



LOGGING, DENSITOMETER SOURCE

| MODEL | NUCLIDE | ACTIVITY |
|----------|---------|----------|
| HEG-0027 | Cs-137 | 10 mCi |
| HEG-0067 | Cs-137 | 20 mCi |
| HEG-0066 | Cs-137 | 55 mCi |
| HEG-0065 | Cs-137 | 100 mCi |
| HEG-CUST | Cs-137 | CUSTOM |

3. SOURCE MUST PASS A RATTLE TEST (PER CUSTOMER REQUEST) AFTER WELDING.
 2. SHIM AS REQUIRED TO ARREST INNER CAPSULE MOVEMENT.

1. ASSEMBLY COMPLETE PER ENGINEERING DRAWING AND PER PROCEDURE PM20-1. FUSION WELD AS REQUIRED.

NOTES: UNLESS OTHERWISE SPECIFIED

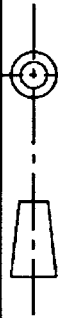
A3906 ASSEMBLY

ISOTOPE PRODUCTS
 LABORATORIES
 BURBANK, CALIFORNIA 91504

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES

| TOLERANCES ON | | ANGLE |
|---------------|---------|-------|
| FRAC-TION | DECIMAL | XXX |
| ±1/64 | ±.1 | .01 |
| | | .002 |
| | | ±.5 |

THIRD ANGLE PROJECTION



DRAWING TITLE
 CALIBRATION SOURCE, Cs-137

SERIES TITLE
 INDUSTRIAL SOURCES, CUSTOM

| DESIGN | MG/DI | SCALE | SIZE | CAGE CODE | REVISION | DRAWING NUMBER | SHEET |
|--------|-------|-------|------|-----------|----------|----------------|--------|
| | | NONE | A | 32993 | G | 3906 | 3 OF 5 |



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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