



U.S. Department
of Transportation

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

**Pipeline and
Hazardous Materials
Safety Administration**

**IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0356/S-96, REVISION 12**

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 Model HEG-XXX Series (A3000, A3000-1, A3015, A3015-1, A3023, A3024-1, A3024-2, A3024-3, and A3024-4), where XXX represents the radionuclide mass number.
2. Source Description - Cylindrical double encapsulations made of Type 304 or 304L stainless steel and fusion welded. Approximate external dimensions are 6.4 mm (0.25 in.) in diameter and 15.9 mm (0.625 in.) in length (Models A3000 and A3000-1); 6.0 mm (0.236 in.) in diameter and 8.0 mm (0.315 in.) in length (Models A3015 and A3015-1); 6.0 mm (0.236 in.) in diameter and 12.0 mm (0.473 in.) in length with one end having an internal 3-48 thread (Model A3023); and 6.0 mm (0.236 in.) in diameter and 10.0 mm (0.394 in.) in length (Models A3024-1, A3024-2, A3024-3, and A3024-4). Construction shall be in accordance with attached Isotope Products Laboratories Drawing Nos. 3000, 3015 (Sheet 3 or 4 of 8), or 3023; or Eckert & Ziegler Isotope Products Drawing Nos. 3000 or 3024 (Sheet 4 or 5 of 8).
3. Radioactive Contents - The sources described by this certificate are authorized to contain any one of the following radionuclides in the chemical form identified and limited to the activity shown.

<u>Radionuclide</u>	<u>Form</u>	<u>Activity GBq (Ci)</u>	
Na-22	NaCl in gold or ceramic	3.7	(0.10)
Co-57	CoCl ₂ or CoO in ceramic or Co metal plated on Ni foil	11.1	(0.30)
Co-58	CoCl ₂ or CoO in ceramic	11.1	(0.30)
Co-60	CoCl ₂ or CoO in ceramic or 1 mm x 1mm Ni clad Co	22.2	(0.60)
Ge-68	GeO ₂ in silver	1.9	(0.05)
Ba-133	BaSO ₄ in ceramic	3.7	(0.10)
Cs-137	CsCl in gold or Cs in ceramic	22.2	(0.60)
Eu-152	Oxide in gold or ceramic	0.74	(0.020)
Ra-226	RaSO ₄ in gold or ceramic	1.9	(0.05)
Cf-252	Oxide in metal or ceramic	0.037	(0.001)
Actinides*	Oxides in gold or ceramic	1.9	(0.05)

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

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.

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.

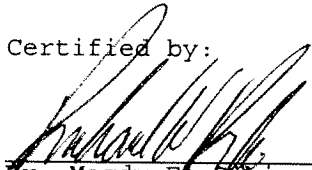
² Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

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5. Expiration Date - This certificate expires on December 31, 2014. On March 31, 2010 this certificate supersedes all previous revisions of USA/0356/S-96.

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 October 05, 2009 petition by Eckert & Ziegler Isotope Products, Valencia, CA, and in consideration of other information on file in this Office.

Certified by:



Dr. Magdy El-Sibbiae
Acting Associate Administrator for
Hazardous Materials Safety

JAN - 5 2010

(DATE)

Revision 12 - Issued to add Models A3000-1, A3024-2, and A3024-4; to delete Model A3030; to add CoCl_2 in ceramic chemical form to the cobalt radionuclides; and to extend the expiration date.