

30 October, 2010

Attn: Richard K. Struckmeyer, Licensing Branch

Office of Federal & State Materials And
Environmental Management Programs
Division of Materials Safety and State Agreements
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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Re: Docket No. 030-38320
Mail Control No. 573162

Dear Mr. Struckmeyer:

This correspondence is in response to your letter dated October 4, 2010 for "Request for Additional Information" regarding Docket No. 030-38320, Mail Control No. 573162.

The sources listed in our license application and all sources manufactured and distributed by Eckert & Ziegler Analytics are calibration or counting standards that we have been supplying to customers (power plants, environmental labs, state labs, EPA facilities, DOE facilities, Universities and Instrument Manufacturers) for over 25 years.

Yes, these sources are often used by customers that are specifically licensed, however, these licenses frequently do not address the specific sources (counting standards) required for some of their detectors. Sometimes these licensees require calibration sources that contain nuclides that are not covered by their license or sometimes these licensees require source geometries that are not covered by the specific sources authorized on their license.

For example, a laboratory with a specific license to handle Co-57 and Ge-68 might require a multiple-nuclide marinelli standard or a Eu-152 standard to calibrate their high purity germanium (HPGe) detector. Or a specific licensee who is authorized to use Kr-85 in bulk quantities might require a Kr-85 glass bulb calibration source which is not listed on their license.

Specific licensees frequently require exempt sources to use for daily stability checks of their instruments and such sources are frequently not specified on specific licenses. Analytics has received numerous inquiries over the years for exempt quantity sources from customers who have a specific license but require sources/geometries or Isotopes that are not listed on their license.

NRC guidance documents explicitly state that licensees should not list exempt sources on their license application. These sources often need to be replaced periodically, thus a specific licensee needs to be able to purchase exempt sources.

Re: Docket No. 030-38320
Mail Control No. 573162


However, at your request, we have further reviewed our proposed list of exempt sources and have made several changes. The changes are listed in attachment 1 and 2. I have also attached a copy of our procedure, in draft form, for exempt source distribution (ANA-HP-16) which has been updated to include the changes listed in attachment 1 and 2.

In addition, I have attached a more detailed description and use of the calibration standards that you identified in your letter (attachment 3 & 4).

If you have any questions, please contact me at one of the following numbers or via email:

Direct: 404-425-5026
Mobile: 770-401-4847
Email: walter.levich@ezag.com

Sincerely,



Walter A. Levich
Plant Manager
Radiation Safety Officer
Eckert & Ziegler Analytics

Attachments:

- 1) Products removed from application
- 2) Products added to application
- 3) Exempt Sources Description and Use – EZA
- 4) Exempt Sources Description and Use – EZN
- 5) Updated EZA Procedure, ANA-HP-16, Processing of Exempt Quantity Distribution Products (draft)
- 6) Instructions for Possession, Use and Disposal of Exempt Quantity Sources, Form ANA-HP-16-01
- 7) Example of product labels
- 8) Example of sales order description (Acknowledgement)
- 9) Drawings
- 10) Shipping procedure, ANA-ADM-02

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: BUTTON Overall Diameter: 1 x 1/4 Inch, 1 x 1/8 Inch Active Diameter: 5 mm Drawing E-XXX-BUT	Manufacturer
E-XXX-BUT	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14- BUT	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- BUT	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CL6- BUT	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- BUT	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NI3- BUT	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-P32- BUT	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PM7- BUT	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0- BUT	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-S35- BUT	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SI2- BUT	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- BUT	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- BUT	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SR9- BUT	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- BUT	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TC9- BUT	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TL4- BUT	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- BUT	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: CARTRIDGE Plastic or Metal Drawing E-XXX-CAR	Manufacturer
E-XXX-CAR	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-CAR	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BI7- CAR	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0- CAR	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-C14- CAR	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- CAR	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- CAR	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1- CAR	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- CAR	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CE9-CAR	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CL6- CAR	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- CAR	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- CAR	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- CAR	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- CAR	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- CAR	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- CAR	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- CAR	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- CAR	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-CAR	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- CAR	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- CAR	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: CARTRIDGE Plastic or Metal Drawing E-XXX-CAR	Manufacturer
E-GA7-CAR	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-CAR	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-CAR	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-CAR	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-CAR	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-HG3- CAR	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- CAR	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-IN1-CAR	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-CAR	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-CAR	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-CAR	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MN4- CAR	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-CAR	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- CAR	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3- CAR	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- CAR	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32- CAR	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-CAR	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-CAR	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7- CAR	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0- CAR	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3- CAR	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- CAR	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- CAR	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5- CAR	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-CAR	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-CAR	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-CAR	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-CAR	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- CAR	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- CAR	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- CAR	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- CAR	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-CAR	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- CAR	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TE3-CAR	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- CAR	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y88- CAR	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- CAR	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- CAR	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-CAR	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-CAR	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-CAR	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Plate 121 x 121 mm Plate, 105 x 105 mm Active Area Frame and backing plate or 171 x 155 mm Plate Tape, 0.5 or 0.8 mg/cm ² mylar cover Drawing E-XXX-PLT	Manufacturer
E-XXX-PLT	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-PLT	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- PLT	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- PLT	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-C14- PLT	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- PLT	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- PLT	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-PLT	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1- PLT	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- PLT	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6- PLT	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- PLT	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- PLT	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- PLT	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- PLT	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- PLT	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- PLT	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- PLT	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- PLT	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-PLT	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- PLT	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- PLT	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-PLT	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-PLT	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-PLT	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-PLT	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-PLT	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-PLT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- PLT	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- PLT	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- PLT	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- PLT	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- PLT	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- PLT	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-PLT	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-PLT	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- PLT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4)	Eckert & Ziegler Analytics
E-MN4- PLT	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- PLT	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- PLT	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3- PLT	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- PLT	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-PLT	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- PLT	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-PLT	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Plate 121 x 121 mm Plate, 105 x 105 mm Active Area Frame and backing plate or 171 x 155 mm Plate Tape, 0.5 or 0.8 mg/cm ² mylar cover Drawing E-XXX-PLT	Manufacturer
E-PM7-PLT	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-PLT	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-PLT	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- PLT	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- PLT	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2- PLT	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB4- PLT	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- PLT	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-PLT	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-PLT	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- PLT	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- PLT	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- PLT	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- PLT	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- PLT	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- PLT	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-PLT	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- PLT	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- PLT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-PLT	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- PLT	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI- PLT	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- PLT	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- PLT	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- PLT	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-PLT	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-PLT	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-PLT	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: POINT Point Source in Tape on 2 Inch Aluminum Ring Drawing E-XXX-PNT	Manufacturer
E-XXX-PNT	XXX = nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14- PNT	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- PNT	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CL6- PNT	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- PNT	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NI3- PNT	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- PNT	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-PNT	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PM7-PNT	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-PNT	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-S35- PNT	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: POINT Point Source in Tape on 2 Inch Aluminum Ring Drawing E-XXX-PNT	Manufacturer
E-SI2-PNT	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- PNT	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- PNT	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SR9- PNT	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- PNT	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TC9- PNT	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TL4- PNT	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- PNT	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: QUENCH 20 mL Flame Sealed Liquid Scintillation Vial or 7 mL Flame Sealed Liquid Scintillation Vial Drawing E-XXX-QUE	Manufacturer
E-XXX-QUE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-GRS-QUE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MGS-QUE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TCC-QUE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TRI-QUE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 2.1 uCi Tri- Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: ROD 0.625 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 2.95 Inch Long, active area <5 mm Drawing E-XXX-ROD	Manufacturer
E-XXX-ROD	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14- ROD	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- ROD	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CL6- ROD	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- ROD	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NI3- ROD	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- ROD	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32- ROD	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: ROD 0.625 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 2.95 Inch Long, active area <5 mm Drawing E-XXX-ROD	Manufacturer
E-PM7- ROD	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0- ROD	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-S35- ROD	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SI2- ROD	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- ROD	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- ROD	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SR9- ROD	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- ROD	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TC9- ROD	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TL4- ROD	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- ROD	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: SAND Marinelli Beakers Bottles Drawing E-XXX-SAN	Manufacturer
E-XXX-SAN	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-SAN	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-SAN	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CL6-SAN	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-SAN	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-H-3-SAN	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-NI3-SAN	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-SAN	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-SAN	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PM7-SAN	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-SAN	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-S35-SAN	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SI2-SAN	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-SAN	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-SAN	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SR9-SAN	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-SAN	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TC9-SAN	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TL4-SAN	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-SAN	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: SIMULATED VEGETATION Marinelli Beakers Bottles Drawing E-XXX-SVE	Manufacturer
E-XXX-SVE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Analytics
E-CA5-SVE	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CL6-SVE	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-SVE	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-H-3-SVE	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-NI3-SVE	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-SVE	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-SVE	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-SVE	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-S35-SVE	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SR9-SVE	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-SVE	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-Y90-SVE	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: SIMULATED GAS 33 mL Glass Gas Sphere; 15 mL Off Gas Vial Marinelli Beakers Drawing E-XXX-SIM	Manufacturer
E-XXX-SIM	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-SIM	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-SIM	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CL6-SIM	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-SIM	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GD3-SIM	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-H-3-SIM	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-NI3-SIM	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-SIM	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-SIM	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PM7-SIM	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-SIM	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-S35-SIM	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SI2-SIM	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-SIM	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-SIM	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SR9-SIM	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-SIM	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TC9-SIM	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TL4-SIM	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-SIM	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: SOLID Liquid Scintillation Vial Marinelli Beaker Bottles Drawing E-XXX-SOL	Manufacturer
E-XXX-SOL	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-SOL	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-SOL	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CL6-SOL	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-SOL	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-H-3-SOL	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-NI3-SOL	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-SOL	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-SOL	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PM7-SOL	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-SOL	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-S35-SOL	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SI2-SOL	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-SOL	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-SOL	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SR9-SOL	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-SOL	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-SOL	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-SOL	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: Button Overall Diameter: 1 x 1/4 Inch, 1 x 1/8 Inch Active Diameter: 5 mm Drawing E-XXX-CKS-BUT	Manufacturer
E-XXX-CKS-BUT	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-CKS-BUT	Ag-110m	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-CKS-BUT	Ba-133	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-CKS-BUT	Bi-207	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-CKS-BUT	Bi-210	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-CKS-BUT	C-14	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-CKS-BUT	Ca-45	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-CKS-BUT	Cd-109	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1-CKS-BUT	Ce-141	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-CKS-BUT	Ce-144	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-CKS-BUT	Cl-36	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-CKS-BUT	Co-57	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-CKS-BUT	Co-58	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-CKS-BUT	Co-60	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-CKS-BUT	Cr-51	Check Source	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-CKS-BUT	Cs-134	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-CKS-BUT	Cs-137	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-CKS-BUT	Eu-152	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-CKS-BUT	Eu-154	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-CKS-BUT	Eu-155	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-CKS-BUT	Fe-55	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-CKS-BUT	Fe-59	Check Source	less than 10 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Button Overall Diameter: 1 x 1/4 Inch, 1 x 1/8 Inch Active Diameter: 5 mm Drawing E-XXX-CKS-BUT	Manufacturer
E-GA7-CKS-BUT	Ga-67	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-CKS-BUT	Ga-71	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-CKS-BUT	Gd-153	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-CKS-BUT	Ge-71	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-GE8-CKS-BUT	Ge-68	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-GRS-CKS-BUT	Multinuclide (no Am-241)	Check Source	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3-CKS-BUT	Hg-203	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-CKS-BUT	Ho-166m	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-CKS-BUT	I-125	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-CKS-BUT	I-129	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-CKS-BUT	I-131	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-CKS-BUT	In-111	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-CKS-BUT	Ir-192	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-CKS-BUT	Ir-194	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-CKS-BUT	Lu-177	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-CKS-BUT	Multinuclide (no Am-241)	Check Source	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN2-CKS-BUT	Mn-52	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-MN4-CKS-BUT	Mn-54	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-CKS-BUT	Mo-99	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-CKS-BUT	Na-22	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-CKS-BUT	Ni-63	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-CKS-BUT	Ni-59	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-CKS-BUT	P-32	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-CKS-BUT	Pd-103	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-CKS-BUT	Pd-109	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-CKS-BUT	Pm-147	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-CKS-BUT	Po-210	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-CKS-BUT	Ru-103	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-CKS-BUT	Ru-106	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-CKS-BUT	S-35	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2-CKS-BUT	Sb-122	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-SB4-CKS-BUT	Sb-124	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5-CKS-BUT	Sb-125	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-CKS-BUT	Se-75	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-CKS-BUT	Si-32	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-CKS-BUT	Sm-151	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-CKS-BUT	Sm-153	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-CKS-BUT	Sn-113	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-CKS-BUT	Sr-85	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-CKS-BUT	Sr-89	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-CKS-BUT	Sr-90	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-CKS-BUT	Ta-182	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-CKS-BUT	Tc-99	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-CKS-BUT	Multinuclide (no Am-241)	Check Source	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TL4-CKS-BUT	Tl-204	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI-CKS-BUT	Multinuclide	Check Source	Not exceeding 2.1 uCi Tri- Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-CKS-BUT	Y-88	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-CKS-BUT	Y-90	Check Source	less than 10 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Button Overall Diameter: 1 x 1/4 Inch, 1 x 1/8 Inch Active Diameter: 5 mm Drawing E-XXX-CKS-BUT	Manufacturer
E-ZN5-CKS-BUT	Zn-65	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-CKS-BUT	Zr-93	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-CKS-BUT	Zr-95	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-CKS-BUT	Zr-97	Check Source	Less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: GAS 33 mL Glass Gas Sphere; Pressurized Lecture Bottle; Pressurized Stainless Steel Cylinder Drawing E-XXX-CKS-GAS	Manufacturer
E-XXX-CKS-GAS	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-KR5-CKS-GAS	Kr-85	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-XE1-CKS-GAS	Xe-131m	Check Source	less than 1000 uCi	Eckert & Ziegler Analytics
E-XE3-CKS-GAS	Xe-133	Check Source	less than 100 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: Liquids 2 - 50 mL Liquid Flame Sealed Vial 100 – 1000 mL Liquid in Flame Sealed Bottle Drawing E-XXX-CKS-LIQ	Manufacturer
E-XXX-CKS-LIQ	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-CKS-LIQ	Ag-110m	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-CKS-LIQ	Ba-133	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-CKS-LIQ	Bi-207	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-CKS-LIQ	Bi-210	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-CKS-LIQ	C-14	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-CKS-LIQ	Ca-45	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-CKS-LIQ	Cd-109	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-CKS-LIQ	Ce-139	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-CKS-LIQ	Ce-141	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-CKS-LIQ	Ce-144	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-CKS-LIQ	Cl-36	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-CKS-LIQ	Co-57	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-CKS-LIQ	Co-58	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-CKS-LIQ	Co-60	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-CKS-LIQ	Cr-51	Check Source	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-CKS-LIQ	Cs-134	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-CKS-LIQ	Cs-137	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-CKS-LIQ	Eu-152	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-CKS-LIQ	Eu-154	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-CKS-LIQ	Eu-155	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-CKS-LIQ	Fe-55	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-CKS-LIQ	Fe-59	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-CKS-LIQ	Ga-67	Check Source	less than 100 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Liquids 2 - 50 mL Liquid Flame Sealed Vial 100 – 1000 mL Liquid in Flame Sealed Bottle Drawing E-XXX-CKS-LIQ	Manufacturer
E-GA1-CKS-LIQ	Ga-71	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-GD8-CKS-LIQ	Gd-148	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-GD3-CKS-LIQ	Gd-153	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-CKS-LIQ	Ge-68	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-CKS-LIQ	Ge-71	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-CKS-LIQ	Multinuclide (no Am-241)	Check Source	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-H3-CKS-LIQ	H-3	Check Source	less than 1 mCi	Eckert & Ziegler Analytics
E-HG3-CKS-LIQ	Hg-203	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-CKS-LIQ	Ho-166m	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-CKS-LIQ	I-125	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-CKS-LIQ	I-129	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-CKS-LIQ	I-131	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-CKS-LIQ	In-111	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-CKS-LIQ	Ir-192	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-CKS-LIQ	Ir-194	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-CKS-LIQ	Lu-177	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-CKS-LIQ	Multinuclide (no Am-241)	Check Source	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-CKS-LIQ	Mn-54	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-CKS-LIQ	Mo-99	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-CKS-LIQ	Na-22	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-CKS-LIQ	Ni-63	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-CKS-LIQ	Ni-59	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-CKS-LIQ	P-32	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-CKS-LIQ	Pd-103	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-CKS-LIQ	Pd-109	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-CKS-LIQ	Pm-147	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-CKS-LIQ	Po-210	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-CKS-LIQ	Ru-103	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-CKS-LIQ	Ru-106	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-CKS-LIQ	S-35	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5-CKS-LIQ	Sb-125	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-CKS-LIQ	Se-75	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-CKS-LIQ	Si-32	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-CKS-LIQ	Sm-151	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-CKS-LIQ	Sm-153	Check Source	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-CKS-LIQ	Sn-113	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-CKS-LIQ	Sr-85	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-CKS-LIQ	Sr-89	Check Source	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-CKS-LIQ	Sr-90	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-CKS-LIQ	Ta-182	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-CKS-LIQ	Tc-99	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-CKS-LIQ	Multinuclide (no Am-241)	Check Source	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-CKS-LIQ	Te-123m	Check Source	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-CKS-LIQ	Tl-204	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI-CKS-LIQ	Multinuclide	Check Source	Not exceeding 2.1 uCi Tri- Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-CKS-LIQ	Y-88	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-CKS-LIQ	Y-90	Check Source	less than 10 uCi	Eckert & Ziegler Analytics

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Liquids 2 - 50 mL Liquid Flame Sealed Vial 100 – 1000 mL Liquid in Flame Sealed Bottle Drawing E-XXX-CKS-LIQ	Manufacturer
E-ZN5-CKS-LIQ	Zn-65	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-CKS-LIQ	Zr-93	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-CKS-LIQ	Zr-95	Check Source	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-CKS-LIQ	Zr-95	Check Source	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 25 mm x 3 mm Active Diameter 16 mm Drawing VZ-1366-001	Manufacturer
E-XXX-VZ1366	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1366	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1366	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1366	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1366	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1366	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1366	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1366	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1366	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1366	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1366	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1366	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1366	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1366	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1366	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1366	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1366	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1366	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1366	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1366	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1366	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1366	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1366	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1366	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1366	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1366	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1366	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1366	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1366	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1366	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1366	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1366	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1366	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1366	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1366	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1366	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1366	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1366	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 25 mm x 3 mm Active Diameter 16 mm Drawing VZ-1366-001	Manufacturer
E-SB4-VZ1366	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1366	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1366	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1366	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1366	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1366	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1366	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1366	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1366	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1366	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1366	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1366	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1366	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1366	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1366	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1366	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 30 mm x 3 mm Active Diameter 25 mm Drawing VZ-1367-001	Manufacturer
E-XXX-VZ1367	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1367	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1367	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1367	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1367	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1367	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1367	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1367	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1367	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1367	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1367	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1367	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1367	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1367	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1367	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1367	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1367	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1367	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1367	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1367	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1367	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1367	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1367	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1367	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1367	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1367	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 30 mm x 3 mm Active Diameter 25 mm Drawing VZ-1367-001	Manufacturer
E-IR4-VZ1367	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1367	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1367	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1367	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1367	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1367	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1367	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1367	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1367S	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1367	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1367	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1367	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1367	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1367	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1367	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1367	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1367	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1367	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1367	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1367	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1367	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1367	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1367	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1367	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1367	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1367	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1367	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1367	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 10-190 x 1- 5 mm Active Diameter 9-188 mm Drawing VZ-497-001	Manufacturer
E-XXX-VZ497	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ497	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ497	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ497	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ497	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ497	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ497	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ497	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ497	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ497	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ497	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ497	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ497	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 10-190 x 1- 5 mm Active Diameter 9-188 mm Drawing VZ-497-001	Manufacturer
E-EU5-VZ497	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ497	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ497	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ497	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ497	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ497	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ497	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ497	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ497	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ497	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ497	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ497	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ497	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ497	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ497	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ497	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ497	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ497	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ497	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ497	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ497	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ497	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ497	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ497	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ497	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ497	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ497	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ497	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ497	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ497	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ497	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ497	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ497	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ497	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ497	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ497	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ497	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ497	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ497	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ497	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ497	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 15-60 x 1 mm Active Diameter 10-55 mm Drawing VZ-2132-001	Manufacturer
E-XXX-VZ2132	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC	

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 15-60 x 1 mm Active Diameter 10-55 mm Drawing VZ-2132-001 Quantity	Manufacturer
E-AG0-VZ2132	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ2132	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ2132	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ2132	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ2132	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ2132	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ2132	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ2132	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ2132	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ2132	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ2132	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ2132	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ2132	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ2132	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ2132	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ2132	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ2132	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ2132	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ2132	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ2132	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ2132	Hö-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ2132	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ2132	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ2132	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ2132	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ2132	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ2132	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ2132	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ2132	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ2132	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ2132	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ2132	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ2132	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ2132S	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ2132	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ2132	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ2132	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ2132	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ2132	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ2132	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ2132	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ2132	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ2132	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ2132	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ2132	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ2132	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ2132	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ2132	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ2132	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ2132	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 15-60 x 1 mm Active Diameter 10-55 mm Drawing VZ-2132-001	Manufacturer
E-ZR3-VZ2132	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ2132	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ2132	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 3 mm Active Diameter 36 mm Drawing VZ-1369-001	Manufacturer
E-XXX-VZ1369	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Nuclitec
E-AG0-VZ1369	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1369	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1369	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1369	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1369	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1369	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1369	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1369	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1369	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1369	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1369	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1369	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1369	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1369	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1369	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1369	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1369	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1369	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1369	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1369	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1369	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1369	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1369	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1369	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1369	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1369	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1369	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1369	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1369	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1369	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1369	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1369	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1369	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1369	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 3 mm Active Diameter 36 mm Drawing VZ-1369-001	Manufacturer
E-RU6-VZ1369	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1369	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1369	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1369	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1369	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1369	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1369	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1369	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1369	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1369	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1369	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1369	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1369	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1369	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1369	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1369	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1369	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1369	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1369	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 60 mm x 3 mm Active Diameter 50 mm Drawing VZ-1370-001	Manufacturer
E-XXX-VZ1370	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1370	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1370	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1370	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1370	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1370	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1370	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1370	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1370	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1370	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1370	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1370	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1370	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1370	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1370	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1370	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1370	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1370	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1370	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1370	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1370	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1370	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1370	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 60 mm x 3 mm Active Diameter 50 mm Drawing VZ-1370-001	Manufacturer
E-I31-VZ1370	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1370	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1370	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1370	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1370	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1370	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1370	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1370	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1370	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1370	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1370	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1370	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1370	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1370	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1370	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1370	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1370	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1370	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1370	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1370	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1370	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1370	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1370	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1370	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1370	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1370	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1370	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1370	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1370	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1370	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1370	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Planchet Source Overall Diameter 194 mm x 3 mm Active Diameter 190 mm Drawing VZ-615-001	Manufacturer
E-XXX-VZ615	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ615	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ615	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ615	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ615	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ615	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ615	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ615	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ615	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ615	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Planchet Source Overall Diameter 194 mm x 3 mm Active Diameter 190 mm Drawing VZ-615-001	Manufacturer
E-CS4-VZ615	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ615	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ615	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ615	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ615	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ615	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ615	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ615	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ615	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ615	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ615	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ615	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ615	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ615	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ615	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ615	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ615	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ615	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ615	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ615	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ615	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ615	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ615	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ615	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ615	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ615	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ615	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ615	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ615	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ615	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ615	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ615	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ615	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ615	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ615	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ615	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ615	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ615	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ615	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ615	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ615	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ615	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ615	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ615	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 0.8 mm Active Diameter 40.6 mm Drawing VZ-1688	Manufacturer
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Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 0.8 mm Active Diameter 40.6 mm Drawing VZ-1688	Manufacturer
E-XXX-VZ1688	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1688	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-Bi7-VZ1688	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1688	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1688	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1688	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1688	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1688	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1688	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1688	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1688	Cr-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1688	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1688	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1688	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1688	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1688	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1688	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1688	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1688	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1688	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1688	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1688	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1688	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1688	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1688	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1688	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1688	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1688	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1688	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1688	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Ni9-VZ1688	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1688	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1688	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1688	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1688	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1688	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1688	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1688	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1688	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1688	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1688	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1688	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1688	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1688	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1688	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1688	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1688	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1688	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1688	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1688	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1688	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 0.8 mm Active Diameter 40.6 mm Drawing VZ-1688	Manufacturer
E-ZR3-VZ1688	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1688	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1688	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 47 mm x 0.8 mm Active Diameter 40 mm Drawing VZ-1964-001	Manufacturer
E-XXX-VZ1964	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1964	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1964	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1964	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1964	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1964	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1964	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1964	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1964	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1964	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1964	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1964	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1964	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1964	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1964	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1964	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1964	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1964	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1964	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1964	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1964	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1964	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1964	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1964	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1964	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1964	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1964	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1964	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1964	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1964	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1964	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1964	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1964	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1964	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 47 mm x 0.8 mm Active Diameter 40 mm Drawing VZ-1964-001	Manufacturer
E-RU3-VZ1964	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1964	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1964	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1964	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1964	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1964	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1964	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1964	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1964	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1964	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1964	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1964	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1964	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1964	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1964	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1964	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1964	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1964	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1964	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1964	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 50 mm x 3 mm Active Diameter 49 mm Drawing VZ-1430-001	Manufacturer
E-XXX-VZ1430	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1430	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1430	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1430	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1430	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1430	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1430	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1430	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1430	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1430	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1430	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1430	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1430	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1430	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1430	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1430	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1430	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1430	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1430	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1430	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1430	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 50 mm x 3 mm Active Diameter 49 mm Drawing VZ-1430-001	Manufacturer
E-HO6-VZ1430	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1430	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1430	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1430	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1430	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1430	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1430	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1430	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1430	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1430	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1430	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1430	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1430	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1430	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1430	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1430	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1430	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1430	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1430	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1430	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1430	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1430	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1430	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1430	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1430	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1430	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1430	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1430	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1430	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1430	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1430	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1430	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1430	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 60 mm x 3 mm Active Diameter 58 mm Drawing VZ-1431-001	Manufacturer
E-XXX-VZ1431	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1431	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1431	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1431	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1431	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1431	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1431	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 60 mm x 3 mm Active Diameter 58 mm Drawing VZ-1431-001	Manufacturer
E-CE4-VZ1431	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1431	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1431	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1431	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1431	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1431	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1431	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1431	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1431	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1431	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1431	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1431	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1431	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1431	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1431	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1431	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1431	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1431	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1431	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1431	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1431	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1431	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1431	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1431	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1431	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1431	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1431	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1431	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1431	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1431	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1431	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1431	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1431	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1431	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1431	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1431	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1431	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1431	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1431	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1431	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1431	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1431	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1431	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1431	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1431	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1431	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1431	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 216 mm x 12 mm Active Diameter 197 mm Drawing VZ-339-001	Manufacturer
E-XXX-VZ339	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ339	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-Bi7-VZ339	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ339	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ339	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ339	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ339	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ339	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ339	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ339	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ339	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ339	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ339	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ339	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ339	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ339	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ339	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ339	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ339	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ339	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ339	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ339	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ339	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ339	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ339	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ339	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ339	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ339	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ339	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ339	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Ni9-VZ339	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ339	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ339	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ339	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ339	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ339	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ339	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ339	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ339	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ339	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ339	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ339	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ339	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ339	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ339	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ339	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ339	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ339	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ339	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ339	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 216 mm x 12 mm Active Diameter 197 mm Drawing VZ-339-001	Manufacturer
E-ZN5-VZ339	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ339	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ339	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ339	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 60 mm x 8 mm Active Diameter 58 mm Drawing VZ-1392-001	Manufacturer
E-XXX-VZ1392	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1392	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1392	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1392	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1392	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1392	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1392	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1392	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1392	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1392	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1392	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1392	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1392	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1392	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1392	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1392	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1392	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1392	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1392	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1392	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1392	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1392	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1392	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1392	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1392	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1392	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1392	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1392	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1392	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1392	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1392	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1392	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1392	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1392	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1392	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1392	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 60 mm x 8 mm Active Diameter 58 mm Drawing VZ-1392-001	Manufacturer
E-S35-VZ1392	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1392	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1392	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1392	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1392	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1392	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1392	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1392	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1392	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1392	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1392	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1392	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1392	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1392	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1392	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1392	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1392	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1392	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 120 mm x 120 mm x 3 mm Active Diameter 100 mm x 100 mm Drawing VZ-626-001	Manufacturer
E-XXX-VZ626	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ626	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ626	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ626	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ626	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ626	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ626	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ626	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ626	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ626	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ626	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ626	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ626	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ626	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ626	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ626	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ626	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ626	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ626	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ626	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ626	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ626	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 120 mm x 120 mm x 3 mm Active Diameter 100 mm x 100 mm Drawing VZ-626-001	Manufacturer
E-I25-VZ626	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ626	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ626	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ626	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ626	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ626	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ626	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ626	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ626	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ626	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ626	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ626	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ626	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ626	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ626	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ626	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ626	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ626	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ626	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ626	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ626	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ626	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ626	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ626	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ626	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ626	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ626	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ626	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ626	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ626	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ626	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ626	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 120 mm x 170 mm x 3 mm Active Diameter 100 mm x 150 mm Drawing VZ-628-001	Manufacturer
E-XXX-VZ628	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ628	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ628	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ628	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ628	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ628	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ628	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ628	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 120 mm x 170 mm x 3 mm Active Diameter 100 mm x 150 mm Drawing VZ-628-001	Manufacturer
E-CO8-VZ628	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ628	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ628	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ628	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ628	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ628	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ628	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ628	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ628	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ628	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ628	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ628	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ628	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ628	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ628	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ628	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ628	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ628	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ628	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ628	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ628	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ628	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ628	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ628	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ628	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ628	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ628	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ628	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ628	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ628	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ628	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ628	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ628	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ628	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ628	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ628	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ628	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ628	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ628	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ628	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ628	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ628	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ628	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ628	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ628	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ628	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 113 mm x 310 mm x 50 mm Active Diameter 100 mm x 100 mm Drawing VZ-1614-001	Manufacturer
E-XXX-VZ1614	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1614	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1614	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1614	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1614	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1614	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1614	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1614	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1614	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1614	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1614	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1614	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1614	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1614	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1614	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1614	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1614	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1614	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1614	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1614	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1614	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1614	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1614	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1614	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1614	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1614	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1614	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1614	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1614	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1614	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1614	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1614	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1614	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1614	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1614	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1614	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1614	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1614	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1614	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1614	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1614	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1614	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1614	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1614	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1614	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1614	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1614	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1614	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1614	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1614	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 113 mm x 310 mm x 50 mm Active Diameter 100 mm x 100 mm Drawing VZ-1614-001	Manufacturer
E-ZN5-VZ1614	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1614	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1614	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1614	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 113 mm x 310 mm x 50 mm Active Diameter 150 mm x 100 mm Drawing VZ-1684-001	Manufacturer
E-XXX-VZ1684	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1684	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1684	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1684	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1684	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1684	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1684	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1684	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1684	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1684	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1684	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1684	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1684	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1684	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1684	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1684	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1684	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1684	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1684	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1684	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1684	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1684	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1684	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1684	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1684	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1684	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1684	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1684	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1684	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1684	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1684	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ1684	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1684	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1684	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1684	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1684	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 113 mm x 310 mm x 50 mm Active Diameter 150 mm x 100 mm Drawing VZ-1684-001	Manufacturer
E-S35-VZ1684	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1684	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1684	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1684	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1684	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1684	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1684	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1684	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1684	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1684	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1684	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1684	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1684	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1684	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1684	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1684	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1684	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1684	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 25 mm x 3 mm Active Diameter 7 mm in 16 mm Foil Drawing VZ-599-002	Manufacturer
E-XXX-VZ599	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ599	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ599	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ599	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ599	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ599	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ599	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ599	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ599	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ599	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ599	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ599	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ599	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ599	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ599	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ599	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ599	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ599	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ599	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ599	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ599	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-HG3-VZ599	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 25 mm x 3 mm Active Diameter 7 mm in 16 mm Foil Drawing VZ-599-002	Manufacturer
E-HO6-VZ599	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ599	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ599	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ599	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ599	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ599	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ599	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ599	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ599	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ599	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ599	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ599	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ599	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ599	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ599	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ599	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ599	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ599	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ599	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ599	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ599	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ599	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ599	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ599	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ599	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ599	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ599	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ599	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ599	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ599	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ599	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ599	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ599	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ599	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ599	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ599	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 4 mm Active Diameter 7 mm in 36 mm foil Drawing VZ-605-002	Manufacturer
E-XXX-VZ605	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ605	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ605	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ605	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 4 mm Active Diameter 7 mm in 36 mm foil Drawing VZ-605-002	Manufacturer
E-CE9-VZ605	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ605	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ605	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ605	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ605	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ605	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ605	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ605	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ605	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ605	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ605	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ605	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ605	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ605	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ605	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ605	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ605	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-HG3-VZ605	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ605	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ605	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ605	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ605	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ605	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ605	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ605	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ605	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ605	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ605	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-P32-VZ605	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ605	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ605	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ605	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ605	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ605	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ605	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ605	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ605	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ605	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ605	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ605	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ605	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ605	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ605	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ605	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ605	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ605	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ605	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ605	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ605	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ605	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ605	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ605	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 4 mm Active Diameter 7 mm in 36 mm foil Drawing VZ-605-002	Manufacturer
E-ZR5-VZ605	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ605	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Ion Exchange Resin Bead Source Mounted in Stainless Steel Capsule Drawing VZ-296-001 and VZ-297	Manufacturer
E-XXX-VZ296	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ296	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Ion Exchange Bead in Plastic Holder Overall Diameter 23.5 mm x 11 mm x 2 mm Drawing VZ-1240-001	Manufacturer
E-XXX-VZ1240	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-VZ1240	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1240	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ1240	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ1240	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ1240	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1240	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ1240	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ1240	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ1240	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ1240	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1240	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1240	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ1240	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ1240	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ1240	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ1240	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ1240	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1240	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ1240	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Ion Exchange Bead in Plastic Holder Overall Diameter 23.5 mm x 11 mm x 2 mm Drawing VZ-1240-001	Manufacturer
E-P32-VZ1240	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ1240	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ1240	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1240	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1240	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ1240	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ1240	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ1240	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ1240	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1240	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ1240	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ1240	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ1240	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ1240	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1240	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ1240	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1240	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1240	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ1240	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ1240	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ1240	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ1240	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Ion Exchange Bead in Plastic Holder Overall Diameter 25 mm x 3 mm Drawing VZ-477-002	Manufacturer
E-XXX-VZ477	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Nuclitec
E-AG0-VZ477	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ477	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CA5-VZ477	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE1-VZ477	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CE4-VZ477	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ477	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GA7-VZ477	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-GA1-VZ477	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GD3-VZ477	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE1-VZ477	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ477	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ477	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I31-VZ477	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-IN1-VZ477	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-IR2-VZ477	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-IR4-VZ477	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-MO9-VZ477	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ477	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NI9-VZ477	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Attachment 1: The following products have been removed from our license application

Model No.	Nuclide	Form	Description: Ion Exchange Bead in Plastic Holder Overall Diameter 25 mm x 3 mm Drawing VZ-477-002	Manufacturer
E-P32-VZ477	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PD3-VZ477	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PD9-VZ477	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ477	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ477	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-RU3-VZ477	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-S35-VZ477	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SB2-VZ477	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SB4-VZ477	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ477	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SM1-VZ477	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SM3-VZ477	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-SN3-VZ477	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR9-VZ477	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ477	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TA2-VZ477	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ477	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ477	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-Y90-VZ477	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR3-VZ477	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR5-VZ477	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZR7-VZ477	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

VZ-297 – Storage Container
VZ-2012 – Source Jig

Attachment 2:

The following products have been added to our license application:

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 40-380 x 3- 6 mm Active Diameter 20-200 mm Drawing VZ-1214-001	Manufacturer
E-XXX-VZ1214	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1214	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1214	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1214	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1214	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1214	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1214	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1214	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1214	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1214	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1214	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1214	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1214	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1214	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1214	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1214	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1214	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Ladder Source Overall Diameter 2020 mm x 267 mm Active Diameter 100 mm x 100 mm each source (6) Drawing VZ-1634-002	Manufacturer
E-XXX-VZ1634	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-TC9-VZ1634	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Beta Reference Source Overall Diameter 87 mm x 50 mm x 1 mm Active Diameter 19 mm Drawing VZ-2029-001	Manufacturer
E-XXX-VZ2029	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CE7-VZ2029	Ce-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ2029	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Attachment 3: EXEMPT SOURCE DESCRIPTIONS - EZA

<u>Product Code</u>	<u>Description</u>	<u>Chemical Form</u>	<u>Physical Form</u>	<u>Product Application (utilization by end-user)</u>
E-XXX-CAR	TEDA impregnated or Silver Zeolite Plastic or Metal Cartridges – cartridges are filled with charcoal or silver zeolite introduced with radioactivity.	Sodium Iodide for all Iodine cartridges. Dry Chlorides for all others	Solid	Used by environmental labs for calibration of HPGe detector systems and to establish counting efficiencies.
E-XXX-FIL	Glass fiber/air filters. Radioactive isotope is uniformly deposited and evaporated onto Mylar which is then adhered to the filter and sealed.	Dry Chlorides	Solid	These filters simulate a filter that is used to collect air samples or wipes/smears used for contamination checks. Used for calibrating HPGe detector systems, alpha/beta counting systems and health physics instrumentation.
E-XXX-GAS	33mL Glass Sphere – glass sphere is filled with an unpressurized radioactive gas.	Kr-85, Xe-131m or Xe-133 with nitrogen as carrier	Gas	This product is used to calibrate HPGe detector systems or used to transfer gas to other types of geometries for calibration of monitoring systems
E-XXX-GAS	Gas Cylinder – gas cylinders are filled with a pressurized radioactive gas.	Kr-85, Xe-131m or Xe-133 with nitrogen as carrier	Gas	Gas cylinders are used to calibrate monitoring systems in power plants and are also used by instrument manufactures to calibrate equipment.
E-XXX-LIQ	Glass Vials - glass ampoules are filled with calibrated radioactive solutions. The glass ampoule is then flame sealed.	Chlorides in 0.1M to 4M HCL, Nitrates in 0.1M to 4M HNO3	Liquid	Used by environmental labs, universities and HP departments for making calibrated dilutions for calibration of detectors/instruments.
E-XXX-LIQ	Reagent Bottles - glass reagent bottles are filled with calibrated radioactive solutions. The glass reagent bottle is then flame sealed.	Chlorides in 0.1M to 4M HCL, Nitrates in 0.1M to 4M HNO3	Liquid	Typically used by environmental labs or other facilities for making tracer solutions for environmental sample analysis.
E-XXX-PLN	Planchets – radioactive isotope is uniformly deposited and evaporated onto Mylar and sealed. The Mylar is then adhered to the bottom of the planchets with or without filter media.	Dry Chlorides	Solid	Widely used for gross alpha/beta measurements and alpha/beta measurements and can be used to simulate wipes. Typical customers are drinking water labs, universities, hospitals, environmental labs.
E-XXX-QUE	Glass or plastic LSV (liquid scintillation vial) – vials are filled with liquid scintillation cocktail and desired isotope and sealed.	Chlorides or Nitrates dissolved in Liquid Scintillation Cocktail	Liquid/Gel	Used by customers to determine counting efficiencies of specific isotopes in liquid scintillation counting systems.

Attachment 3: EXEMPT SOURCE DESCRIPTIONS - EZA

<u>Product Code</u>	<u>Description</u>	<u>Chemical Form</u>	<u>Physical Form</u>	<u>Product Application (utilization by end-user)</u>
E-XXX-UNQ	LSV Source - same as above but provided as a set of sources in glass flame sealed liquid scintillation vials.	Organic Compound labeled with H-3 or C-14 dissolved in toluene or dodecane	Liquid	Used for daily checks of liquid scintillation counting systems.
E-XXX-ROD	Acrylic rods filled at one end with an isotope (backfilled with resin) in a point source configuration.	Dry Chlorides or Nitrates	Solid	Typically used in nuclear medicine applications.
E-XXX-SAN	Marinelli Beaker - specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with homogenized sand that has an isotope uniformly introduced.	Dry Sulfides	Solid	Used by environmental labs for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SAN	Plastic Bottle - Plastic bottle is filled with homogenized sand that has an isotope uniformly introduced.	Dry Sulfides	Solid	Used by environmental labs for calibrating HPGe detector system and establishing efficiency.
E-XXX-SIM	Glass Sphere - 33mL glass spheres filled with radioactive styrofoam beads which simulate the density of gas.	Chlorides dissolved in organic solvents and dried on Styrofoam beads	Solid	Used by power plants for calibration of HPGe detector systems and to establish counting efficiencies.
E-XXX-SIM	Off Gas -15mL glass vials filled with radioactive styrofoam beads used to simulate gas.	Chlorides dissolved in organic solvents and dried on Styrofoam beads	Solid	Used for calibration of HPGe detector systems and to establish counting efficiencies.
E-XXX-SIM	Marinelli Beaker - specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with radioactive styrofoam beads.	Chlorides dissolved in organic solvents and dried on Styrofoam beads	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.

Attachment 3: EXEMPT SOURCE DESCRIPTIONS - EZA

<u>Product Code</u>	<u>Description</u>		<u>Physical Form</u>	<u>Product Utilization</u>
E-XXX-SVE	Marinelli Beaker - specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with homogenized vegetation that has an isotope uniformly introduced.	Dry Sulfides	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SVE	Plastic Bottle - plastic bottle is filled with uniformly homogenized vegetation spiked with a radioactive isotope.	Dry Sulfides	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SOL	LSV Source - glass or plastic vials are filled with a uniformly mixed radioactive polyester resin to simulate the density of a water sample.	Dry Sulfides incorporated in a polyester resin	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SOL	Marinelli Beaker Gamma Source -specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with a uniformly mixed radioactive polyester resin to simulate the density of a water sample.	Dry Sulfides incorporated in a polyester resin	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing efficiencies.
E-XXX-SOL	Plastic Bottle - plastic bottle is filled with a uniformly mixed radioactive polyester resin to simulate the density of a water sample.	Dry Sulfides incorporated in a polyester resin	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing efficiencies.

Attachment 4: EXEMPT SOURCE DESCRIPTIONS - EZN

Drawing #	Description	Chemical Form	Physical Form	Product Application (utilization by end-user)
VZ-3433-001	Co-60 Source	Cobalt Metal	Solid	Oil well logging
VZ-1614-001	Alpha Beta Reference Source	Active material is incorporated in the anodized layer of an 0.3 mm thick aluminum foil	Solid	Calibration of hand-foot contamination monitors Single sided source
VZ-1684-001	Alpha Beta Reference Source	Active material is incorporated in the anodized layer of an 0.3 mm thick aluminum foil	Solid	Calibration of hand-foot contamination monitors Double sided source
VZ-269-001	Gamma Check Source	Ceramic	Solid	Instrument check source. The outer thread allows to adjust the dose rate when mounted into a corresponding source holder
VZ-296-001	Schulpräparat			Removed from Application
VZ-297	Storage Container			Removed from Application
VZ-2012	Source Jig			Removed from Application
VZ-542-001	Gamma Source	Ceramic	Solid	Calibration and stabilization of NaI-Detectors which are used for oil well logging
VZ-543-001	Gamma Source	Ceramic	Solid	Calibration and stabilization of NaI-Detectors which are used for oil well logging
VZ-2936-001	Gamma Source	Ceramic	Solid	Calibration and stabilization of NaI-Detectors which are used for oil well logging
VZ-130/2	Cs-137 Gamma Srce	Ceramic	Solid	Calibration sources in welded stainless capsules for use under specific environmental conditions
VZ-1145	Cs-137 Gamma Srce	Ceramic	Solid	Calibration sources in welded stainless capsules for use under specific environmental conditions
VZ-2733	Cs-137 Gamma Srce	Ceramic	Solid	Calibration sources in welded stainless capsules for use under specific environmental conditions
VZ-623-002	C-14 Dust Monitor Source	Dried salt, Barium carbonate	Solid	Replaced by VZ-623-001

Attachment 4: EXEMPT SOURCE DESCRIPTIONS - EZN

Drawing #	Description	Chemical Form	Physical Form	Product Application (utilization by end-user)
ES-3686-001	C-14 Dust Monitor Source	Dried salt, Barium carbonate	Solid	Used in Dust Monitors when registered with SSDR for instruments. At this time used for laboratory use only.
VZ-3549-002	Na-22 Check Source	Sodium Chloride	Solid	Energy calibration of gamma detectors developed for DHS
VZ-1240-001	Gamma Reference Source	Nuclide incorporated in organic ion exchange bead	Solid	Efficiency and energy calibration of gamma spectroscopy instruments
VZ-477-002	Gamma Reference Source	Nuclide incorporated in organic ion exchange bead	Solid	Efficiency and energy calibration of gamma spectroscopy instruments
VZ-3493-001	Sr-90 / Y-90 Source	Strontium Chloride	Solid	Efficiency calibration of instruments installed on US Navy ships and submarines
VZ-3494-001	Sr-90 / Y-90 Source	Strontium Chloride	Solid	Efficiency calibration of instruments installed on US Navy ships and submarines

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Approval Signatures and Dates:			
Initiator of Document/Changes:	Manager Responsible Department:	Quality Assurance:	
WL	WL	ND	

1.0 Purpose:

The purpose of this procedure is to outline the processing of exempt quantity distribution products.

2.0 Scope:

This procedure entails the license to manufacture, process, produce, package, repackage, or transfer quantities of radioactive material for commercial transfer or distribution to persons exempt from licensing requirements (general public) in accordance with a license issued by the Nuclear Regulatory Commission (NRC).

3.0 Safety:

Not Applicable

4.0 Definitions/Acronyms:

Not Applicable

5.0 Equipment/Materials:

Not Applicable

6.0 Flow Chart:

Not Applicable

7.0 Procedure:

7.1. General Information:

7.1.1. Eckert & Ziegler Analytics (EZA) is licensed to manufacture, process, produce, package, repackage, dispose, or transfer quantities of radioactive material for commercial transfer or distribution to persons exempt from licensing requirements (general public) in accordance with a license issued by the NRC (referred to as an E-license).

7.1.2. All exempt distributions must be in accordance with this E-license. In general, the NRC licenses byproduct material as defined in the Energy Policy Act of 2005 (EPA). This expanded definition of byproduct material includes naturally occurring and accelerator produced radioactive material (NARM). Appendix 10.1 shows the nuclides and upper limits of activities that are exempted by the NRC exempt quantity regulations (10 CFR 30.71 Schedule B).

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Each user is responsible for verifying that he or she has the current version of this procedure. The current procedure can be located at a controlled document station or on the intranet on the "Z" drive.

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7.1.3. State variations – with the new definition of byproduct material, the NRC regulates all exempt distribution sources, so State variations will not be encountered.

7.1.4. Appendix 10.2 shows the list of EZA products whose distribution and possession is exempted from licensing requirements in accordance with EZA's Exempt Quantity Distribution License.

7.2. Sales:

7.2.1. The nuclide, activity, and model number for each order must be checked by a member of the Customer Service Department to verify that:

7.2.1.1. The article is an NRC approved EZA Model Number series (Appendix 10.2 lists the NRC approved Sources) that meets the requirements shown in Appendix 10.1 under the column labeled 'NRC Quantity.'

7.2.1.2. The total activity to ship to the customer in a single shipment does not exceed 10 times the exempt quantity limit.

7.2.2. If the material is exempt, Customer Service (the person who performs the verification) stamps or writes "EXEMPTED QUANTITIES" on the work order and notes the following information in the Exempt Quantity Order Log (which may exist in data base form):

NOTE:

During order entry either select the Exempt Quantity model number, feature option, or make sure that the words "Exempt Quantity" are present in the item description or other section of the Order.

7.2.2.1. Date

7.2.2.2. Company and Address

7.2.2.3. Nuclide

7.2.2.4. Activity

7.2.2.5. EZA Model and/or Catalog Number

7.2.2.6. Number of Items

7.2.2.7. NRC (exempt source)

7.2.3. If the order is for the maximum exempt amount of a nuclide, Sales also must note on the work Order that this "maximum activity MUST NOT be exceeded" and/or indicate the accepted activity range e.g. +0%, -15%.

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7.2.4. All sales orders containing exempt quantity sources must be reviewed and countersigned by either QO or HP qualified personnel. This approval is documented on the EZA Purchase order review form.

7.3. Inventory Control (Labeling):

7.3.1. Each Exempt Quantity Source must be marked or labeled with the words, "Radioactive Material". In addition, the following must also appear on the source in a legible and durable fashion:

- 7.3.1.1. Nuclide
- 7.3.1.2. Activity (in microcuries)
- 7.3.1.3. Serial/Source number or lot number
- 7.3.1.4. Calibration or Reference date

7.3.2. The order processing paperwork, procedures, drawings, and/or engraving/marking instructions shall state that the source must be marked with "Radioactive Material", nuclide, activity, serial/source or lot number, and calibration or reference date.

7.4. Quality Control:

7.4.1. Each Exempt Quantity Source must undergo and pass the following Quality Control inspections:

- 7.4.1.1 Visual inspection of required labeling. The words "Radioactive Material" must be visible on the source. The nuclide, activity, serial/source number or lot number, and calibration or reference date must be visible on the source.
- 7.4.1.2 Review the contained activity per the Quality Control Review Form or lab notebook page to verify that activity is below exempt quantity limits as listed on Appendices 10.1 and 10.2 of this procedure.
- 7.4.1.3 Verify that Form ANA-HP-16-01 "Important Instructions for Exempt Material" is included with the order.
- 7.4.1.4 Standard Quality Control checks as required by contract, work order, and/or product Quality Control procedures.

7.5. Preparation for Shipping:

7.5.1. Each quantity of exempt material listed in Appendix 10.1 must be separately and individually packaged.

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- 7.5.1.1. No more than 10 Exempt Quantity Sources may be placed in any outer package.
- 7.5.1.2. The dose rate of any external surface of the outer package must not exceed 0.5 mR/h.
- 7.5.1.3. Each Exempt Quantity Source must be marked in accordance to section 7.3.1 of this procedure.
- 7.5.1.4. Each order must include instructions for possession, use, and disposal of exempt radioactive material, Form ANA-HP-16-01.
- 7.5.1.5. When transferring sources containing fractional amounts of Exempt Quantity Limits, the sum of the activities in one shipment must not exceed 10 exempt quantity limits for the nuclide involved.
- 7.5.1.6. Multiple packages each containing up to 10 sources as described in 7.5.1.1 may be shipped to any single customer on any given day as long as the total activity of all the sources doesn't exceed 10 times the exempt quantity.

NOTE:

For example, for a nuclide with an Exempt Quantity of 10 uCi, the customer could receive 10 sources that were each 10 uCi in one box

Or

The customer could receive 100 sources that were 1 uCi each – 10 boxes with 10 sources in each box would be required for this order.

7.6. Reports:

7.6.1. There are two reports that are generated:

- 7.6.1.1. NRC Exempt Quantity Report per 10 CFR 32.16 and 10 CFR 32.20.
 - 7.6.1.1.1. Report should include: Nuclide, Physical Form (liquid, solid, gas), and Quantity.
- 7.6.1.2. Summary Report when filing a renewal or when notifying the NRC of discontinuation of activities under the E-license
- 7.6.1.3. NRC notification per 10 CFR 21.21 (as referred).

7.6.2. Records of transfers shall be retained for one year after inclusion in a summary report.

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8.0 Reference(s):

- 8.1. US NRC exempt distribution license XX-XXXXX-XXX
- 8.2. 10 CFR 21 Reporting of defects and non-compliance
- 8.3. 10 CFR 30 Rules Of General Applicability To Domestic Licensing Of Byproduct Material
- 8.4. 10 CFR 32 Specific domestic licenses to manufacture and transfer certain items containing byproduct materials.

9.0 Revision History:

Revision:	Effective Date:	Description of Change:	Submitted/ Approved By:

10.0 Appendices:

- 10.1. NRC Exempt Quantities
- 10.2. Exempt Quantity Sources
- 10.3. Instructions for Possession, Use, and Disposal
- 10.4. Description of Multinuclide Mixture Options

11.0 Forms:

- 11.1. Form ANA-HP-16-01 "Important Instructions for Possession, Use, Storage, and Disposal of Exempt Radioactive Material.

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Appendix 10.1: NRC Exempt Quantities (10 CFR 30.71 Schedule B)

Radionuclide	NRC Quantity (Microcuries)
Antimony-122 (Sb-122)	100
Antimony-124 (Sb-124)	10
Antimony-125 (Sb-125)	10
Arsenic-73 (As-73)	100
Arsenic-74 (As-74)	10
Arsenic-76 (As-76)	10
Arsenic-77 (As-77)	100
Barium-131 (Ba-131)	10
Barium-133 (Ba-133)	10
Barium-140 (Ba-140)	10
Beryllium-7 (Be-7)	Not Allowed
Bismuth-210 (Bi-210)	1
Bromine-82 (Br-82)	10
Cadmium-109 (Cd-109)	10
Cadmium-115m (Cd-115m)	10
Cadmium-115 (Cd-115)	100
Calcium-45 (Ca-45)	10
Calcium-47 (Ca-47)	10
Carbon-14 (C-14)	100
Cerium-141 (Ce-141)	100
Cerium-143 (Ce-143)	100
Cerium-144 (Ce-144)	1
Cesium-129 (Cs-129)	100
Cesium-131 (Cs-131)	1,000
Cesium-134m (Cs-134m)	100
Cesium-134 (Cs-134)	1

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Radionuclide	NRC Quantity (Microcuries)
Cesium-135 (Cs-135)	10
Cesium-136 (Cs-136)	10
Cesium-137 (Cs-137)	10
Chlorine-36 (Cl-36)	10
Chlorine-38 (Cl-38)	10
Chromium-51 (Cr-51)	1,000
Cobalt-57 (Co-57)	100
Cobalt-58m (Co-58m)	10
Cobalt-58 (Co-58)	10
Cobalt-60 (Co-60)	1
Copper-64 (Cu-64)	100
Dysprosium-165 (Dy-165)	10
Dysprosium-166 (Dy-166)	100
Erbium-169 (Er-169)	100
Erbium-171 (Er-171)	100
Europium-152 9.2 h (Eu-152 9.2 h)	100
Europium-152 13 yr (Eu-152 13 yr)	1
Europium-154 (Eu-154)	1
Europium-155 (Eu-155)	10
Fluorine-18 (F-18)	1,000
Gadolinium-153 (Gd-153)	10
Gadolinium-159 (Gd-159)	100
Gallium-67 (Ga-67)	100
Gallium-72 (Ga-72)	10
Germanium-68 (Ge-68)	10
Germanium-71 (Ge-71)	100
Gold-195 (Au-195)	10
Gold-198 (Au-198)	100
Gold-199 (Au-199)	100

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Radionuclide	NRC Quantity (Microcuries)
Hafnium-181 (Hf-181)	10
Holmium-166 (Ho-166)	100
Hydrogen-3 (H-3)	1,000
Indium-111 (In-111)	100
Indium-113m (In-113m)	100
Indium-114m (In-114m)	10
Indium-115m (In-115m)	100
Indium-115 (In-115)	10
Iodine-123 (I-123)	100
Iodine-125 (I-125)	1
Iodine-126 (I-126)	1
Iodine-129 (I-129)	0.1
Iodine-131 (I-131)	1
Iodine-132 (I-132)	10
Iodine-133 (I-133)	1
Iodine-134 (I-134)	10
Iodine-135 (I-135)	10
Iridium-192 (Ir-192)	10
Iridium-194 (Ir-194)	100
Iron-52 (Fe-52)	10
Iron-55 (Fe-55)	100
Iron-59 (Fe-59)	10
Krypton-85 (Kr-85)	100
Krypton-87 (Kr-87)	10
Lanthanum-140 (La-140)	10
Lead-210 (Pb-210)	Not Allowed
Lutetium-177 (Lu-177)	100
Manganese-52 (Mn-52)	10
Manganese-54 (Mn-54)	10

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Radionuclide	NRC Quantity (Microcuries)
Manganese-56 (Mn-56)	10
Mercury-197m (Hg-197m)	100
Mercury-197 (Hg-197)	100
Mercury-203 (Hg-203)	10
Molbdenum-99 (Mo-99)	100
Neodymium-147 (Nd-147)	100
Neodymium-149 (Nd-149)	100
Nickel-59 (Ni-59)	100
Nickel-63 (Ni-63)	10
Nickel-65 (Ni-65)	100
Niobium-93m (Nb-93m)	10
Niobium-95 (Nb-95)	10
Niobium-97 (Nb-97)	10
Osmium-185 (Os-185)	10
Osmium-191m (Os-191m)	100
Osmium-191 (Os-191)	100
Osmium-193 (Os-193)	100
Palladium-103 (Pd-103)	100
Palladium-109 (Pd-109)	100
Phosphorus-32 (P-32)	10
Platinum-191 (Pt-191)	100
Platinum-193m (Pt-193m)	100
Platinum-193 (Pt-193)	100
Platinum-197m (Pt-197m)	100
Platinum-197 (Pt-197)	100
Polonium-210 (Po-210)	0.1
Potassium-42 (K-42)	10
Potassium-43 (K-43)	10
Praseodymium-142 (Pr-142)	100

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Radionuclide	NRC Quantity (Microcuries)
Praseodymium-143 (Pr-143)	100
Promethium-147 (Pm-147)	10
Promethium-149 (Pm-149)	10
Rhenium-186 (Re-186)	100
Rhenium-188 (Re-188)	100
Rhodium-103m (Rh-103m)	100
Rhodium-105 (Rh-105)	100
Rubidium-81 (Rb-81)	10
Rubidium-86 (Rb-86)	10
Rubidium-87 (Rb-87)	10
Ruthenium-97 (Ru-97)	100
Ruthenium-103 (Ru-103)	10
Ruthenium-105 (Ru-105)	10
Ruthenium-106 (Ru-106)	1
Samarium-151 (Sm-151)	10
Samarium-153 (Sm-153)	100
Scandium-46 (Sc-46)	10
Scandium-47 (Sc-47)	100
Scandium-48 (Sc-48)	10
Selenium-75 (Se-75)	10
Silicon-31 (Si-31)	100
Silver-105 (Ag-105)	10
Silver-110m (Ag-110m)	1
Silver-111 (Ag-111)	100
Sodium-22 (Na-22)	10
Sodium-24 (Na-24)	10
Strontium-85 (Sr-85)	10
Strontium-89 (Sr-89)	1
Strontium-90 (Sr-90)	0.1

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Radionuclide	NRC Quantity (Microcuries)
Strontium-91 (Sr-91)	10
Strontium-92 (Sr-92)	10
Sulphur-35 (S-35)	100
Tantalum-182 (Ta-182)	10
Technetium-96 (Tc-96)	10
Technetium-97m (Tc-97m)	100
Technetium-97 (Tc-97)	100
Technetium-99m (Tc-99m)	100
Technetium-99 (Tc-99)	10
Tellurium-125m (Te-125m)	10
Tellurium-127m (Te-127m)	10
Tellurium-127 (Te-127)	100
Tellurium-129m (Te-129m)	10
Tellurium-129 (Te-129)	100
Tellurium-131m (Te-131m)	10
Tellurium-132 (Te-132)	10
Terbium-160 (Tb-160)	10
Thallium-200 (Tl-200)	100
Thallium-201 (Tl-201)	100
Thallium-202 (Tl-202)	100
Thallium-204 (Tl-204)	10
Thulium-170 (Tm-170)	10
Thulium-171 (Tm-171)	10
Tin-113 (Sn-113)	10
Tin-125 (Sn-125)	10
Tungsten-181 (W-181)	10
Tungsten-185 (W-185)	10
Tungsten-187 (W-187)	100
Vanadium-48 (V-48)	10

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Radionuclide	NRC Quantity (Microcuries)
Xenon-131m (Xe-131m)	1,000
Xenon-133 (Xe-133)	100
Xenon-135 (Xe-135)	100
Ytterbium-175 (Yb-175)	100
Yttrium-87 (Y-87)	10
Yttrium-88 (Y-88)	10
Yttrium-90 (Y-90)	10
Yttrium-91 (Y-91)	10
Yttrium-92 (Y-92)	100
Yttrium-93 (Y-93)	100
Zinc-65 (Zn-65)	10
Zinc-69m (Zn-69m)	100
Zinc-69 (Zn-69)	1,000
Zirconium-93 (Zr-93)	10
Zirconium-95 (Zr-95)	10
Zirconium-97 (Zr-97)	10
Any radionuclide not listed above other than alpha emitting radionuclides	0.1

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Appendix 10.2: Exempt Quantity Sources

The following Eckert & Ziegler Analytics products are exempt quantity sources:

Model No.	Nuclide	Form	Description: BUTTON Overall Diameter: 1 x 1/4 Inch, 1 x 1/8 Inch Active Diameter: 5 mm Drawing E-XXX-BUT	Manufacturer
E-XXX-BUT	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-BUT	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-BUT	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- BUT	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0- BUT	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9- BUT	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1- BUT	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- BUT	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CE9-BUT	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CO7- BUT	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- BUT	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- BUT	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- BUT	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- BUT	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- BUT	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- BUT	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- BUT	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-BUT	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9- BUT	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-BUT	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-BUT	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-BUT	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-BUT	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GE8-BUT	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GRS-BUT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- BUT	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- BUT	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- BUT	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- BUT	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- BUT	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-BUT	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-BUT	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-BUT	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-BUT	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- BUT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN2- BUT	Mn-52	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MN4- BUT	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: BUTTON Overall Diameter: 1 x 1/4 Inch, 1 x 1/8 Inch Active Diameter: 5 mm Drawing E-XXX-BUT	Manufacturer
E-MO9- BUT	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- BUT	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- BUT	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD3- BUT	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9- BUT	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3- BUT	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- BUT	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB2- BUT	Sb-122	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB4- BUT	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- BUT	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-BUT	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3- BUT	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- BUT	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-BUT	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- BUT	Multinuclide (No Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TRI- BUT	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- BUT	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- BUT	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-BUT	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-BUT	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-BUT	Zr-97	Counting Standard	Less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: CARTRIDGE Plastic or Metal Drawing E-XXX-CAR	Manufacturer
E-XXX-CAR	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3- CAR	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GRS-CAR	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-I25- CAR	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- CAR	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-CAR	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-MGS-CAR	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TCC- CAR	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TRI- CAR	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: DISK Overall Diameter: 25.4 x 0.64 mm 47 x 0.64 mm or 47.1 x 0.9 mm Active Diameter: 5 mm – 47 mm Drawing E-XXX-DIS	Manufacturer
E-XXX-DIS	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-DIS	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- DIS	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- DIS	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-C14- DIS	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- DIS	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- DIS	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1- DIS	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- DIS	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CE9-DIS	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CL6- DIS	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- DIS	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- DIS	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- DIS	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- DIS	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- DIS	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- DIS	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- DIS	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- DIS	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-DIS	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- DIS	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- DIS	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-DIS	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-DIS	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-DIS	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-DIS	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-DIS	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-DIS	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- DIS	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- DIS	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- DIS	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- DIS	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- DIS	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- DIS	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-DIS	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-DIS	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- DIS	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- DIS	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- DIS	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- DIS	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: DISK Overall Diameter: 25.4 x 0.64 mm 47 x 0.64 mm or 47.1 x 0.9 mm Active Diameter: 5 mm – 47 mm Drawing E-XXX-DIS	Manufacturer
E-NI3- DIS	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- DIS	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32- DIS	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- DIS	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9- DIS	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7- DIS	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0- DIS	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3- DIS	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- DIS	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- DIS	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2- DIS	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB4- DIS	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- DIS	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-DIS	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-DIS	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- DIS	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- DIS	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- DIS	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- DIS	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- DIS	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- DIS	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-DIS	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- DIS	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- DIS	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-DIS	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- DIS	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI- DIS	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- DIS	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- DIS	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- DIS	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-DIS	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-DIS	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-DIS	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: ELECTRODEPOSITED 24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk 47.1 mm Diameter x 0.9 mm Thick Stainless Steel Disk Drawing E-XXX-ELE	Manufacturer
E-XXX- ELE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-TC9- ELE	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: FILTER 47-50 mm Diameter Filter in Tape or in Planchet or Petri Dish 0.5, 0.8, 1.7 or 10.8 mg/cm2 tape cover Drawing E-XXX-FIL	Manufacturer
E-XXX-FIL	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-FIL	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- FIL	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- FIL	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-C14- FIL	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- FIL	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- FIL	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-FIL	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1- FIL	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- FIL	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6- FIL	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- FIL	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- FIL	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- FIL	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- FIL	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- FIL	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- FIL	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- FIL	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- FIL	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-FIL	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- FIL	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- FIL	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-FIL	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-FIL	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-FIL	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-FIL	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-FIL	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-FIL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- FIL	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- FIL	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- FIL	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- FIL	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- FIL	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- FIL	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-FIL	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-FIL	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- FIL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- FIL	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- FIL	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- FIL	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: FILTER 47-50 mm Diameter Filter in Tape or in Planchet or Petri Dish 0.5, 0.8, 1.7 or 10.8 mg/cm2 tape cover Drawing E-XXX-FIL	Manufacturer
E-NI3- FIL	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- FIL	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-FIL	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- FIL	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-FIL	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-FIL	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-FIL	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-FILS	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- FIL	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- FIL	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2- FIL	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB4- FIL	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- FIL	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-FIL	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-FIL	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- FIL	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- FIL	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- FIL	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- FIL	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- FIL	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- FIL	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-FIL	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- FIL	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-FIL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-FIL	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- FIL	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI- FIL	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- FIL	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- FIL	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- FIL	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-FIL	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-FIL	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-FIL	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: GAS 33 mL Glass Gas Sphere; Pressurized Lecture Bottle; Pressurized Stainless Steel Cylinder Drawing E-XXX-GAS	Manufacturer
E-XXX-GAS	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-KR5-GAS	Kr-85	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-Xe1-GAS	Xe-131m	Counting Standard	less than 1000 uCi	Eckert & Ziegler Analytics
E-Xe3-GAS	Xe-133	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: LIQUIDS 2 - 50 mL Liquid Flame Sealed Vial 100 - 1000 mL Liquid in Flame Sealed Reagent Bottle Drawing E-XXX-LIQ	Manufacturer
E-XXX-LIQ	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-LIQ	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-LIQ	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-LIQ	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-LIQ	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-LIQ	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-LIQ	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-LIQ	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-LIQ	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-LIQ	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-LIQ	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-LIQ	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-LIQ	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-LIQ	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-LIQ	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-LIQ	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-LIQ	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-LIQ	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-LIQ	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-LIQ	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-LIQ	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-LIQ	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-LIQ	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-LIQ	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-LIQ	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-LIQ	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-LIQ	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-LIQ	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-LIQ	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-H-3-LIQ	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-HG3-LIQ	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-LIQ	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-LIQ	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-LIQ	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-LIQ	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-LIQ	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-LIQ	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-LIQ	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-LIQ	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-LIQ	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-LIQ	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: LIQUIDS 2 - 50 mL Liquid Flame Sealed Vial 100 - 1000 mL Liquid in Flame Sealed Reagent Bottle Drawing E-XXX-LIQ	Manufacturer
E-MO9-LIQ	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-LIQ	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-LIQ	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-LIQ	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-LIQ	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-LIQ	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-LIQ	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-LIQ	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-LIQ	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-LIQ	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-LIQ	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-LIQ	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5-LIQ	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-LIQ	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-LIQ	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-LIQ	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-LIQ	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-LIQ	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-LIQ	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-LIQ	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-LIQ	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-LIQ	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC5-LIQ	Tc-95m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TC9-LIQ	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-LIQ	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-LIQ	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-LIQ	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI-LIQ	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-LIQ	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-LIQ	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-LIQ	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-LIQ	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-LIQ	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-LIQ	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: PLANCHET Simulated Evaporated Liquid Stainless Steel or Aluminum Planchet with 0.5, 0.8 or 1.7 mg/cm2 mylar cover Drawing E-XXX-PLN	Manufacturer
E-XXX-PLN	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-PLN	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- PLN	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- PLN	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-C14- PLN	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- PLN	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- PLN	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-PLN	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1- PLN	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- PLN	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6- PLN	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- PLN	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- PLN	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- PLN	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- PLN	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- PLN	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- PLN	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- PLN	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- PLN	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-PLN	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- PLN	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- PLN	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-PLN	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-PLN	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-PLN	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-PLN	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-PLN	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-PLN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- PLN	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- PLN	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- PLN	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- PLN	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- PLN	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- PLN	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-PLN	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-PLN	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- PLN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- PLN	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- PLN	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- PLN	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: PLANCHET Simulated Evaporated Liquid Stainless Steel or Aluminum Planchet with 0.5, 0.8 or 1.7 mg/cm2 mylar cover Drawing E-XXX-PLN	Manufacturer
E-NI3- PLN	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- PLN	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-PLN	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- PLN	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-PLN	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-PLN	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-PLN	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-PLN	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- PLN	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- PLN	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2- PLN	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB4- PLN	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- PLN	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-PLN	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-PLN	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- PLN	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- PLN	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- PLN	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- PLN	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- PLN	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- PLN	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-PLN	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- PLN	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- PLN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-PLN	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- PLN	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI- PLN	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- PLN	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- PLN	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- PLN	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-PLN	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-PLN	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-PLN	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: POINT Point Source in Tape on 2 Inch Aluminum Ring Drawing E-XXX-PNT	Manufacturer
E-XXX-PNT	XXX = nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-PNT	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- PNT	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- PNT	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CD9- PNT	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-PNT	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1- PNT	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- PNT	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7- PNT	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- PNT	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- PNT	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- PNT	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- PNT	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- PNT	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- PNT	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- PNT	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-PNT	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9- PNT	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-PNT	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-PNT	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD8-PNT	Gd-148	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-GD3-PNT	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-PNT	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-PNT	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-PNT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- PNT	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- PNT	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- PNT	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- PNT	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- PNT	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- PNT	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-PNT	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-PNT	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- PNT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- PNT	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- PNT	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- PNT	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- PNT	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-PNT	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-PNT	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- PNT	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB2- PNT	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: POINT Point Source in Tape on 2 Inch Aluminum Ring Drawing E-XXX-PNT	Manufacturer
E-SB4- PNT	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- PNT	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-PNT	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3- PNT	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- PNT	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-PNT	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- PNT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-PNT	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI- PNT	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- PNT	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- PNT	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-PNT	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-PNT	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-PNT	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: QUENCH 20 mL Flame Sealed Liquid Scintillation Vial or 7 mL Flame Sealed Liquid Scintillation Vial Drawing E-XXX-QUE	Manufacturer
E-XXX-QUE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-QUE	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-QUE	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-QUE	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-QUE	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-QUE	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-QUE	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-QUE	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-QUE	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-QUE	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-QUE	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-QUE	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-QUE	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-QUE	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-QUE	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-QUE	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-QUE	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-QUE	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-QUE	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-QUE	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-QUE	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-QUE	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-QUE	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-QUE	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-QUE	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-QUE	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-QUE	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-QUE	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-H-3-QUE	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-HG3-QUE	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-QUE	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-QUE	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-QUE	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-QUE	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-QUE	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-QUE	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-QUE	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-QUE	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MN4-QUE	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-QUE	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-QUE	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-QUE	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-QUE	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics

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E-P32-QUE	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-QUE	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-QUE	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-QUE	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-QUE	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-QUE	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-QUE	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-QUE	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5-QUE	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-QUE	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-QUE	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-QUE	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-QUE	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-QUE	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-QUE	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-QUE	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-QUE	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-QUE	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-QUE	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TE3-QUE	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-QUE	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y88-QUE	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-QUE	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-QUE	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-QUE	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-QUE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-QUE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: UNQUENCHED 20 mL Flame Sealed Liquid Scintillation Vial or 7 mL Flame Sealed Liquid Scintillation Vial Drawing E-XXX-UNQ	Manufacturer
E-XXX-UNQ	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-UNQ	C-14	Counting Standard	less than 100 μ Ci	Eckert & Ziegler Analytics
E-H-3-UNQ	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: ROD 0.625 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 3 Inch Long, active area <5 mm Drawing E-XXX-ROD	Manufacturer
E-XXX-ROD	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0- ROD	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- ROD	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- ROD	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0- ROD	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9- ROD	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1- ROD	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- ROD	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CE9- ROD	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CO7- ROD	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- ROD	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- ROD	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- ROD	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- ROD	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- ROD	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- ROD	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- ROD	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5- ROD	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9- ROD	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7- ROD	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1- ROD	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3- ROD	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1- ROD	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GE8- ROD	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GRS- ROD	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- ROD	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- ROD	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- ROD	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- ROD	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- ROD	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- ROD	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2- ROD	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4- ROD	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7- ROD	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- ROD	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN2- ROD	Mn-52	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MN4- ROD	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- ROD	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- ROD	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: ROD 0.625 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 5 Inch Long, active area <5 mm 0.5 Inch Diameter x 2.95 Inch Long, active area <5 mm Drawing E-XXX-ROD	Manufacturer
E-PD3- ROD	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9- ROD	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3- ROD	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- ROD	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB2- ROD	Sb-122	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB4- ROD	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- ROD	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5- ROD	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3- ROD	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- ROD	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2- ROD	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- ROD	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TRI- ROD	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- ROD	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- ROD	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3- ROD	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5- ROD	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7- ROD	Zr-97	Counting Standard	Less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: SAND Marinelli Beakers Bottles Drawing E-XXX-SAN	Manufacturer
E-XXX-SAN	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-SAN	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SAN	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SAN	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SAN	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9-SAN	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SAN	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SAN	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SAN	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7-SAN	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SAN	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SAN	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SAN	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SAN	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SAN	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SAN	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SAN	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SAN	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9-SAN	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SAN	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SAN	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-SAN	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SAN	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SAN	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3-SAN	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SAN	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SAN	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SAN	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SAN	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SAN	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SAN	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SAN	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SAN	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SAN	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-SAN	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SAN	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SAN	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SAN	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-SAN	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-SAN	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: SAND Marinelli Beakers Bottles Drawing E-XXX-SAN	Manufacturer
E-SB5-SAN	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SAN	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3-SAN	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SAN	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-SAN	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SAN	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SAN	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SAN	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SAN	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SAN	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SAN	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: SIMULATED GAS 33 mL Glass Gas Sphere; 15 mL Off Gas Vial Marinelli Beakers Drawing E-XXX-SIM	Manufacturer
E-XXX-SIM	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-SIM	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SIM	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SIM	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SIM	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9-SIM	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SIM	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SIM	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SIM	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7-SIM	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SIM	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SIM	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SIM	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SIM	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SIM	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SIM	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SIM	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SIM	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9-SIM	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SIM	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SIM	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SIM	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SIM	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SIM	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3-SIM	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SIM	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SIM	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SIM	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SIM	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SIM	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SIM	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SIM	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SIM	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SIM	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SIM	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-SIM	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SIM	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SIM	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SIM	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-SIM	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-SIM	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: SIMULATED GAS 33 mL Glass Gas Sphere; 15 mL Off Gas Vial Marinelli Beakers Drawing E-XXX-SIM	Manufacturer
E-SB5-SIM	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SIM	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3-SIM	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SIM	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-SIM	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SIM	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SIM	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI-SIM	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SIM	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SIM	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SIM	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SIM	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SIM	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: SIMULATED VEGETATION Marinelli Beakers Bottles Drawing E-XXX-SVE	Manufacturer
E-XXX-SVE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Analytics
E-AG0-SVE	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SVE	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SVE	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SVE	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-SVE	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-SVE	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-SVE	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SVE	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SVE	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SVE	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-SVE	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-SVE	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SVE	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SVE	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SVE	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SVE	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SVE	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SVE	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SVE	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SVE	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-SVE	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-SVE	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SVE	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SVE	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-SVE	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SVE	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SVE	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SVE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-H-3-SVE	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-HG3-SVE	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SVE	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SVE	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SVE	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SVE	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SVE	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SVE	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SVE	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SVE	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SVE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SVE	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: SIMULATED VEGETATION Marinelli Beakers Bottles Drawing E-XXX-SVE	Manufacturer
E-MO9-SVE	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SVE	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-SVE	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-SVE	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-SVE	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SVE	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SVE	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-SVE	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU3-SVE	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-SVE	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-SVE	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5-SVE	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SVE	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-SVE	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-SVE	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-SVE	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-SVE	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SVE	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-SVE	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-SVE	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-SVE	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-SVE	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SVE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SVE	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-SVE	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI-SVE	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SVE	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-SVE	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SVE	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SVE	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SVE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SVE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: SOLID Liquid Scintillation Vial Marinelli Beaker Bottles Drawing E-XXX-SOL	Manufacturer
E-XXX-SOL	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-SOL	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SOL	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SOL	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SOL	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9-SOL	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SOL	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SOL	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SOL	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7-SOL	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SOL	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SOL	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SOL	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SOL	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SOL	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SOL	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SOL	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SOL	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9-SOL	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SOL	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SOL	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-SOL	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SOL	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SOL	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SOL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3-SOL	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SOL	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SOL	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SOL	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SOL	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SOL	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SOL	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SOL	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SOL	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SOL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SOL	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-SOL	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SOL	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SOL	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SOL	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-SOL	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Model No.	Nuclide	Form	Description: SOLID Liquid Scintillation Vial Marinelli Beaker Bottles Drawing E-XXX-SOL	Manufacturer
E-RU6-SOL	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB5-SOL	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SOL	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3-SOL	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SOL	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-SOL	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-SOL	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SOL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SOL	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI-SOL	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SOL	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SOL	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SOL	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SOL	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SOL	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 25 mm x 3 mm Active Diameter 16 mm Drawing VZ-1366-001	Manufacturer
E-XXX-VZ1366	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1366	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1366	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1366	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1366	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1366	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1366	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1366	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1366	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1366	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1366	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1366	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1366	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1366	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1366	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1366	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1366	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 30 mm x 3 mm Active Diameter 25 mm Drawing VZ-1367-001	Manufacturer
E-XXX-VZ1367	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1367	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1367	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1367	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1367	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1367	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1367	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1367	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1367	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1367	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1367	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1367	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1367	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1367	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1367	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1367	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1367	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 10-190 x 1- 5 mm Active Diameter 9-188 mm Drawing VZ-497-001	Manufacturer
E-XXX-VZ497	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ497	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ497	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ497	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ497	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ497	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ497	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ497	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ497	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ497	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ497	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ497	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ497	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ497	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ497	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ497	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ497	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 40-380 x 3- 6 mm Active Diameter 20-200 mm Drawing VZ-1214-001	Manufacturer
E-XXX-VZ1214	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1214	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1214	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1214	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1214	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1214	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1214	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1214	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1214	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1214	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1214	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1214	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1214	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1214	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1214	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1214	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1214	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 15-60 x 1 mm Active Diameter 10-55 mm Drawing VZ-2132-001	Manufacturer
E-XXX-VZ2132	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ2132	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ2132	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ2132	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ2132	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ2132	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ2132	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ2132	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ2132	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ2132	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ2132	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ2132	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ2132	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ2132	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ2132	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ2132	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ2132	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 3 mm Active Diameter 36 mm Drawing VZ-1369-001	Manufacturer
E-XXX-VZ1369	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Nuclitec
				Eckert & Ziegler Nuclitec
E-BA3-VZ1369	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1369	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1369	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1369	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1369	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1369	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1369	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1369	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1369	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1369	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1369	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1369	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1369	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1369	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1369	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1369	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 60 mm x 3 mm Active Diameter 50 mm Drawing VZ-1370-001	Manufacturer
E-XXX-VZ1370	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1370	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1370	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1370	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1370	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1370	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1370	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1370	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1370	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1370	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1370	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1370	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1370	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1370	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1370	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1370	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1370	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Planchet Source Overall Diameter 194 mm x 3 mm Active Diameter 190 mm Drawing VZ-615-001	Manufacturer
E-XXX-VZ615	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ615	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ615	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ615	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ615	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ615	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ615	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ615	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ615	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ615	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ615	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ615	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ615	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ615	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ615	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ615	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ615	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 50 mm x 0.8 mm Active Diameter 40.6 mm Drawing VZ-1688	Manufacturer
E-XXX-VZ1688	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1688	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1688	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1688	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1688	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1688	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1688	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1688	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1688	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1688	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1688	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1688	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1688	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1688	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1688	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1688	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1688	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 47 mm x 0.8 mm Active Diameter 40 mm Drawing VZ-1964-001	Manufacturer
E-XXX-VZ1964	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1964	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1964	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1964	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1964	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1964	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1964	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1964	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1964	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1964	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1964	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1964	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1964	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1964	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1964	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1964	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1964	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 50 mm x 3 mm Active Diameter 49 mm Drawing VZ-1430-001	Manufacturer
E-XXX-VZ1430	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1430	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1430	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1430	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1430	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1430	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1430	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1430	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1430	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1430	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1430	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1430	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1430	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1430	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1430	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1430	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1430	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 60 mm x 3 mm Active Diameter 58 mm Drawing VZ-1431-001	Manufacturer
E-XXX-VZ1431	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1431	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1431	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1431	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1431	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1431	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1431	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1431	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1431	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1431	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1431	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1431	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1431	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1431	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1431	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1431	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1431	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 216 mm x 12 mm Active Diameter 197 mm Drawing VZ-339-001	Manufacturer
E-XXX-VZ339	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ339	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ339	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ339	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ339	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ339	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ339	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ339	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ339	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ339	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ339	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ339	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ339	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ339	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ339	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ339	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ339	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source Overall Diameter 60 mm x 8 mm Active Diameter 58 mm Drawing VZ-1392-001	Manufacturer
E-XXX-VZ1392	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1392	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1392	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1392	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1392	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1392	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1392	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1392	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1392	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1392	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1392	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1392	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1392	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1392	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1392	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1392	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1392	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 120 mm x 120 mm x 3 mm Active Diameter 100 mm x 100 mm Drawing VZ-626-001	Manufacturer
E-XXX-VZ626	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ626	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ626	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ626	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ626	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ626	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ626	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ626	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ626	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ626	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ626	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ626	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ626	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ626	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ626	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ626	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ626	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 120 mm x 170 mm x 3 mm Active Diameter 100 mm x 150 mm Drawing VZ-628-001	Manufacturer
E-XXX-VZ628	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ628	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ628	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ628	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ628	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ628	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ628	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ628	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ628	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ628	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ628	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ628	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ628	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ628	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ628	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ628	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ628	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Photon Source Overall Diameter 150 mm x 150 mm x 3 mm Active Diameter 100 mm x 100 mm Drawing VZ-1658-001	Manufacturer
E-XXX-VZ1658	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-FE5-VZ1658	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source Overall Diameter 150 mm x 150 mm x 3 mm Active Diameter 100 mm x 100 mm 200 mg/cm ² Stainless Steel Drawing VZ-1776-001	Manufacturer
E-XXX-VZ1776	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO7-VZ1776	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source Overall Diameter 150 mm x 150 mm x 3 mm Active Diameter 100 mm x 100 mm 800 mg/cm ² Stainless Steel Drawing VZ-2162-001	Manufacturer
E-XXX-VZ2162	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2162	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source Overall Diameter 150 mm x 150 mm x 3 mm Active Diameter 100 mm x 100 mm 81 mg/cm ² Aluminum Drawing VZ-1898-001	Manufacturer
E-XXX-VZ1898	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO0-VZ1898	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Gamma Reference Source Overall Diameter 50 mm x 3 mm Active Diameter 32 mm Drawing VZ-2130	Manufacturer
E-XXX-VZ2130	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-I29-VZ2130	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source Overall Diameter 120 mm x 170 mm x 5 mm Active Diameter 100 mm x 150 mm Drawing VZ-1958	Manufacturer
E-XXX-VZ1958	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-I29-VZ1958	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum LadderSource Overall Diameter 2020 mm x 267 mm Active Diameter 100 mm x 100 mm each source (6) Drawing VZ-1634-002	Manufacturer
E-XXX-VZ1634	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO0-VZ1634	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1634	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1634	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Beta Source Overall Diameter 87 mm x 50 mm x 1 mm Active Diameter 19 mm Drawing VZ-2020-001	Manufacturer
E-XXX-VZ2020	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CL6-VZ2020	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ2020	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ2020	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ2020	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Beta Reference Source Overall Diameter 87 mm x 50 mm x 1 mm Active Diameter 19 mm Drawing VZ-2029-001	Manufacturer
E-XXX-VZ2029	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2029	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ2029	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ2029	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Co-60 Check Source Overall Diameter 16 mm x 60 mm Active Diameter 2 mm 5 discs on 1 strip Drawing VZ-3433-001	Manufacturer
E-XXX-VZ3433	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO0-VZ3433	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 113 mm x 310 mm x 50 mm Active Diameter 100 mm x 100 mm Drawing VZ-1614-001	Manufacturer
E-XXX-VZ1614	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1614	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1614	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1614	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1614	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1614	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1614	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1614	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1614	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1614	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1614	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1614	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1614	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1614	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1614	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1614	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1614	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 113 mm x 310 mm x 50 mm Active Diameter 150 mm x 100 mm Drawing VZ-1684-001	Manufacturer
E-XXX-VZ1684	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1684	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1684	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1684	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1684	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1684	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1684	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1684	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1684	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1684	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1684	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1684	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1684	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1684	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1684	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1684	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1684	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Beta / Gamma Reference Disk Source Overall Diameter 25 mm x 3 mm Active Diameter 7 mm in 16 mm Foil Drawing VZ-599-002	Manufacturer
E-XXX-VZ599	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ599	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ599	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ599	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ599	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ599	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ599	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ599	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I29-VZ599	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ599	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ599	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ599	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ599	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Beta / Gamma Reference Disk Source Overall Diameter 50 mm x 4 mm Active Diameter 7 mm in 36 mm foil Drawing VZ-605-002	Manufacturer
E-XXX-VZ605	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ605	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ605	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ605	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ605	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ605	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ605	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ605	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I29-VZ605	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ605	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ605	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ605	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ605	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Anodized Aluminum Source Overall Diameter 134 mm x 210 mm Active Diameter 10 mm x 75 mm Drawing VZ-1610	Manufacturer
E-XXX-VZ1610	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-H-3-VZ1610	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source Overall Diameter 86 mm x 226 mm Active Diameter 15 mm x 152 mm Drawing VZ-1516-001	Manufacturer
E-XXX-VZ1516	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-H-3-VZ1516	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Check Source Soldered to a Brass Capsule Drawing VZ-269-001	Manufacturer
E-XXX-VZ269	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ269	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Active Diameter 32 mm Drawing VZ-2044	Manufacturer
E-XXX-VZ2044	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-FE5-VZ2044	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule Active Diameter 5.8 mm Drawing VZ-2134-001	Manufacturer
E-XXX-VZ2134	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2134	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule Drawing VZ-542-001	Manufacturer
E-XXX-VZ542	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ542	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO6-VZ542	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule Drawing VZ-543 -001	Manufacturer
E-XXX-VZ543	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ543	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO6-VZ543	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule Drawing VZ-2936-001	Manufacturer
E-XXX-VZ2936	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2936	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule Drawing VZ-130/2	Manufacturer
E-XXX-VZ130	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ130	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule Drawing VZ-1145	Manufacturer
E-XXX-VZ1145	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ1145	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule Drawing VZ-2733	Manufacturer
E-XXX-VZ2733	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2733	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: C-14 Beta Check Source Glued in Aluminum Capsule Drawing VZ-623-002	Manufacturer
E-XXX-VZ623	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-VZ623	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: C-14 Beta Check Source glued in Aluminum Capsule Drawing ES-3686-001	Manufacturer
E-XXX-VZ3686	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-VZ3686	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Check Source Laminated between Sealed Plastic Foils Drawing VZ-3549-002	Manufacturer
E-XXX-VZ3549	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-NA2-VZ3549	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source Overall Diameter 23.5 mm x 11 mm x 2 mm Drawing VZ-1240-001	Manufacturer
E-XXX-VZ1240	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1240	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1240	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1240	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1240	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1240	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1240	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1240	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1240	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1240	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1240	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1240	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1240	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1240	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1240	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1240	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1240	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1240	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1240	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1240	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1240	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1240	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1240	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1240	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1240	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1240	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1240	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1240	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1240	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source Overall Diameter 25 mm x 3 mm Drawing VZ-477-002	Manufacturer
E-XXX-VZ477	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Nuclitec
				Eckert & Ziegler Nuclitec
E-BA3-VZ477	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ477	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ477	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ477	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ477	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ477	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ477	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ477	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ477	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ477	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ477	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ477	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ477	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ477	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ477	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ477	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ477	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ477	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ477	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ477	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ477	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ477	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ477	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ477	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ477	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ477	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ477	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ477	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

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Model No.	Nuclide	Form	Description: Sr-90 Beta Source Overall Diameter 25 mm x 0.8 mm Active Diameter 24 mm Drawing VZ-3493-001	Manufacturer
E-XXX-VZ3493	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-SR0-VZ3493	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description Sr-90 Beta Source Overall Diameter 50 mm x 5 mm Active Diameter 44.45 mm Drawing VZ-3494-001	Manufacturer
E-XXX-VZ3494	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-SR0-VZ3494	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

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Appendix 10.3: Instructions for Possession, Use, and Disposal

(Suggested text for FORM ANA-HP-16-01: "Important Instructions for Exempt Material")

IMPORTANT

INSTRUCTIONS FOR POSSESSION, USE, AND DISPOSAL OF EXEMPT RADIOACTIVE MATERIAL

The enclosed contents of Radioactive Material are exempt from NRC or Agreement State licensing requirements.

These contents are Radioactive Material – Not for Human Use -

HANDLING

- Although the quantities of radioactive material contained in these products is extremely small, the basic radiation principals of time, distance, and shielding should be practiced as effective methods for minimizing exposure.
- Use of radioactive material should be only by responsible persons in authorized areas.
- Introduction into foods, beverages, cosmetics, drugs, or medicinals, or into products manufactured for commercial distribution is prohibited.
- Gloves, safety glasses, and laboratory coats should be worn when working with liquid radioactive material.

USE

- Disk sources should be held by the metal or plastic sides or back. Be careful not to damage any foil used to cover the radioactive material.
- Liquid sources should be handled in such a way as to minimize spillage of the liquid on fingers or unprepared surfaces.
- Exempt quantities should not be combined.

Eckert & Ziegler Analytics
1380 Seaboard Industrial Blvd
Atlanta, GA 30318
Tel 404-352-8677
Fax 404-352-2837

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IMPORTANT

INSTRUCTIONS FOR POSSESSION, USE, AND DISPOSAL OF EXEMPT RADIOACTIVE MATERIAL

CONTAMINATION

- Loose radioactive material may be cleaned up with small quantities of detergent in water and absorbent materials.

STORAGE

- Store all sources in a secured container with visible identification when not in use.

DISPOSAL

- This product may be disposed of without regard to its radioactive content provided all radiation symbols have been removed or defaced.

These instructions apply only to the exempt material shipped by Eckert & Ziegler Analytics and are meant as guidelines for your safe handling of the sources. Radioactive material possessed under a specific license from the NRC or an Agreement State must be handled in accordance with those specific license requirements.

Eckert & Ziegler Analytics
1380 Seaboard Industrial Blvd
Atlanta, GA 30318
Tel 404-352-8677
Fax 404-352-2837

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Appendix 10.4: Description of MultiNuclide Mixture Options

Mixed Gamma Series (multinuclide) - maximum activity for an Exempt Quantity source is 3.5 uCi total

Nuclides	Exempt Qty Limit	Activity in a 3.5 uCi source
¹⁰⁹ Cd	10 uCi	2.590 uCi
⁵⁷ Co	100 uCi	0.057 uCi
¹³⁹ Ce	0.1 uCi	0.085 uCi
²⁰³ Hg	10 uCi	0.189 uCi
¹¹³ Sn	10 uCi	0.148 uCi
¹³⁷ Cs	10 uCi	0.071 uCi
⁶⁰ Co	1 uCi	0.113 uCi
⁸⁸ Y	10 uCi	0.247 uCi

Gamma-Ray Series (multinuclide) - maximum activity for an Exempt Quantity source is 6.0 uCi total

Nuclides	Exempt Qty Limit	Activity in a 6.0 uCi source
¹⁰⁹ Cd	10 uCi	2.530 uCi
⁵⁷ Co	100 uCi	0.060 uCi
¹³⁹ Ce	0.1 uCi	0.085 uCi
⁵¹ Cr	10 uCi	2.540 uCi
¹¹³ Sn	10 uCi	0.140 uCi
⁸⁵ Sr	10 uCi	0.200 uCi
¹³⁷ Cs	10 uCi	0.075 uCi
⁶⁰ Co	1 uCi	0.120 uCi
⁸⁸ Y	10 uCi	0.250 uCi

Tri-Nuclide Series - maximum activity for an Exempt Quantity source is 2.1 uCi total

Nuclides	Exempt Qty Limit	Activity in a 2.1 uCi source
¹⁵⁴ Eu	1 uCi	0.84 uCi
¹⁵⁵ Eu	10 uCi	0.42 uCi
¹²⁵ Sb	10 uCi	0.84 uCi

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Appendix 10.4: Description of MultiNuclide Mixture Options

TCC Series (multinuclide) - maximum activity for an Exempt Quantity source is 4.1 uCi total

Nuclides	Exempt Qty Limit	Activity in a 4.1 uCi source
¹⁰⁹ Cd	10 uCi	2.450 uCi
⁵⁷ Co	100 uCi	0.070 uCi
¹³⁹ Ce	0.1 uCi	0.080 uCi
²⁰³ Hg	10 uCi	0.180 uCi
¹¹³ Sn	10 uCi	0.120 uCi
¹³⁴ Cs	1 uCi	0.280 uCi
¹³⁷ Cs	10 uCi	0.070 uCi
⁵⁴ Mn	10 uCi	0.150 uCi
⁸⁸ Y	10 uCi	0.290 uCi
⁶⁵ Zn	10 uCi	0.410 uCi

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IMPORTANT

INSTRUCTIONS FOR POSSESSION, USE, AND DISPOSAL OF EXEMPT RADIOACTIVE MATERIAL

The enclosed contents of Radioactive Material are exempt from NRC or Agreement State licensing requirements.

These contents are Radioactive Material – Not for Human Use -

HANDLING

- Although the quantities of radioactive material contained in these products is extremely small, the basic radiation principals of time, distance, and shielding should be practiced as effective methods for minimizing exposure.
- Use of radioactive material should be only by responsible persons in authorized areas.
- Introduction into foods, beverages, cosmetics, drugs, or medicinals, or into products manufactured for commercial distribution is prohibited.
- Gloves, safety glasses, and laboratory coats should be worn when working with liquid radioactive material.

USE

- Disk sources should be held by the metal or plastic sides or back. Be careful not to damage any foil used to cover the radioactive material.
- Liquid sources should be handled in such a way as to minimize spillage of the liquid on fingers or unprepared surfaces.
- Exempt quantities should not be combined.

CONTAMINATION

- Loose radioactive material may be cleaned up with small quantities of detergent in water and absorbent materials.

STORAGE

- Store all sources in a secured container with visible identification when not in use.

DISPOSAL

- This product may be disposed of without regard to its radioactive content provided all radiation symbols have been removed or defaced.

These instructions apply only to the exempt material shipped by Eckert & Ziegler Analytics and are meant as guidelines for your safe handling of the sources. Radioactive material possessed under a specific license from the NRC or an Agreement State must be handled in accordance with those specific license requirements.

Example of Eckert & Ziegler Analytics Labels that are affixed to the counting standards



**Eckert & Ziegler
Analytics**

Atlanta, GA 30318 USA
404-352-8677

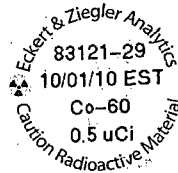
Co-60

SRS: 83121-29 Activity: 0.50 μCi

Date: 10/01/10 12:00 EST Exp: 10/01/13

PO#: EXAMPLE ORDER, ITEM 1

QA: _____



**Eckert & Ziegler
Analytics**

Atlanta, GA 30318 USA
404-352-8677

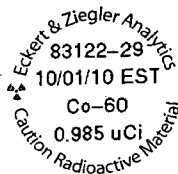
Co-60

SRS: 83122-29 Activity: 0.985 μCi

Date: 10/01/10 12:00 EST Exp: 10/01/13

PO#: EXAMPLE ORDER, ITEM 1

QA: _____



Order Acknowledgement



Eckert & Ziegler Analytics

1380 Seaboard Industrial Blvd.
Atlanta, GA 30318

Tel: (404) 352-8677
Fax: (404) 352-2837

Order No 18807 Order Date 9/1/2010 Page 1

Customer Purchase Order

EXAMPLE ORDER

Bill To

Analytics, Inc.
1380 Seaboard Ind. Blvd.
Atlanta, GA 30318
US

Ship To

Analytics, Inc.
1380 Seaboard Industrial Blvd.
Atlanta, GA 30318
US

Dear Customer,

This document acknowledges receipt of your order. Please review the information presented here and advise us of any errors you notice or disagreements you have at your earliest convenience. For fastest service, write or call us at the address and phone number printed above. Please refer to our Order Number and your P.O. Number in all correspondence.

Customer	Payment terms	Ship Date	Shipping Instructions
ANAINC01	Net 30 Days FEDX 2 PRE&ADD	10/1/2010	

Item No	Quantity	UOM	Unit price	Disc Pct	Extended price
E-CO0-BUT CO-60 1 INCH X 1/4 INCH BUTTON CALIBRATION STANDARD, 0.5 MICROCI, EXEMPTED QUANTITIES	1.00	EA	1.00		1.00
		01-Oct-2010		Loc: INV	Unique Line No.: 1
E-CO0-BUT CO-60 1 INCH X 1/4 INCH BUTTON CALIBRATION STANDARD, 1.0 MICROCI +0 / - 20%, EXEMPTED QUANTITIES	1.00	EA	1.00		1.00
		01-Oct-2010		Loc: INV	Unique Line No.: 2

Sales amount: 2.00 USD

Sales tax: 0.00 USD

Total 2.00 USD

Purchase Order Review Checklist

Site	EZA Sales Order # - Customer #
Company	Date PO received:
P.O. Number	Release

Customer Service Review

Date and Initials of Reviewer

A. Verify the sources are considered exempt under procedure HP-ANA-16 under Appendix 10.1, 10.2, and 10.4?	<input type="checkbox"/> Yes	<input type="checkbox"/> No, move to regular PO review checklist	
B. Is requested ship date acceptable?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Exception
C. Have geometries and quantities been specified? Appendix 10.2	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
D. Do prices on PO match Quotation?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
E. Are Commercial terms acceptable?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Warranty Exception <input type="checkbox"/> Yes <input type="checkbox"/> No
			Advise Warranty <input type="checkbox"/> Yes <input type="checkbox"/> No
Federal Express Acct#	<input type="checkbox"/> FCA	<input type="checkbox"/> Net 30	<input type="checkbox"/> Credit Card <input type="checkbox"/> Ship Via <input type="checkbox"/> Ship Charges

Notes: If no is checked, write provision (advise) or exception for acknowledgment

QA / Regulatory Review

Date and Initials of Reviewer

A. Are the QA Requirements acceptable?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
B. Is shipment DG for transport?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If yes, can we ship excepted? <input type="checkbox"/> Yes <input type="checkbox"/> No explain
C. What documentation is requested/required?	<input type="checkbox"/> Important Notice for Possession, Use, and Disposal of Exempt Radioactive Material Form		
D. Cannot exceed more than 10 exempt source quantity limits as stated in procedure HP-ANA- 16, Appendix 10.1, per package	<input type="checkbox"/> Yes,	<input type="checkbox"/> No	if not please notify shipping to ship sources in more than 1 box

Notes: To shipping "The dose rate of any external surface of the outer package must not exceed 0.5 mR/h."

Production Review

Date and Initials of Reviewer

A. Can we meet traceability on isotopes at levels requested?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
B. Are specified geometries acceptable?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
C. Are there any production questions / concerns?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
D. Any QC questions or concerns?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	- If yes, forward to Radioassay / QC for review.

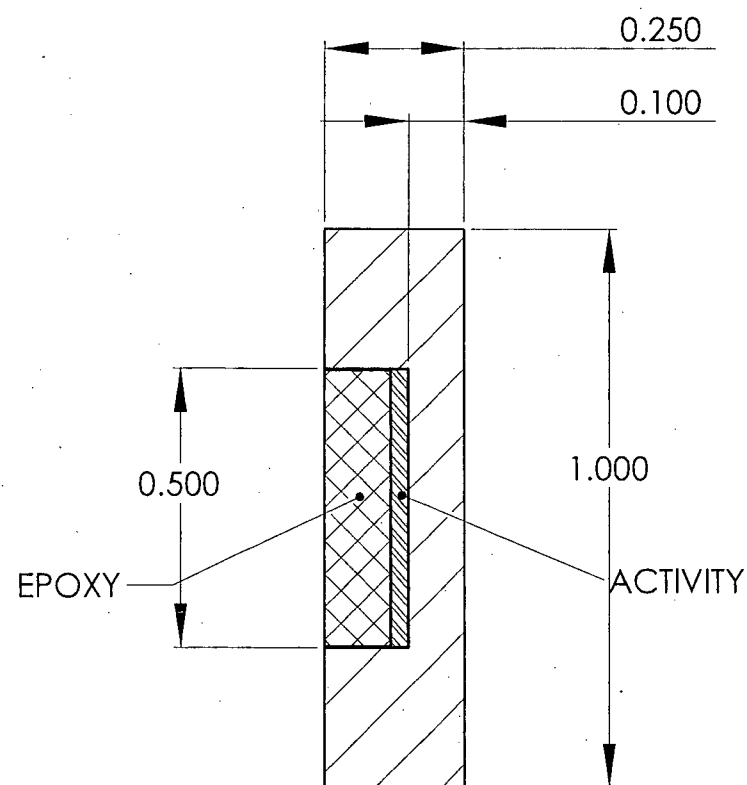
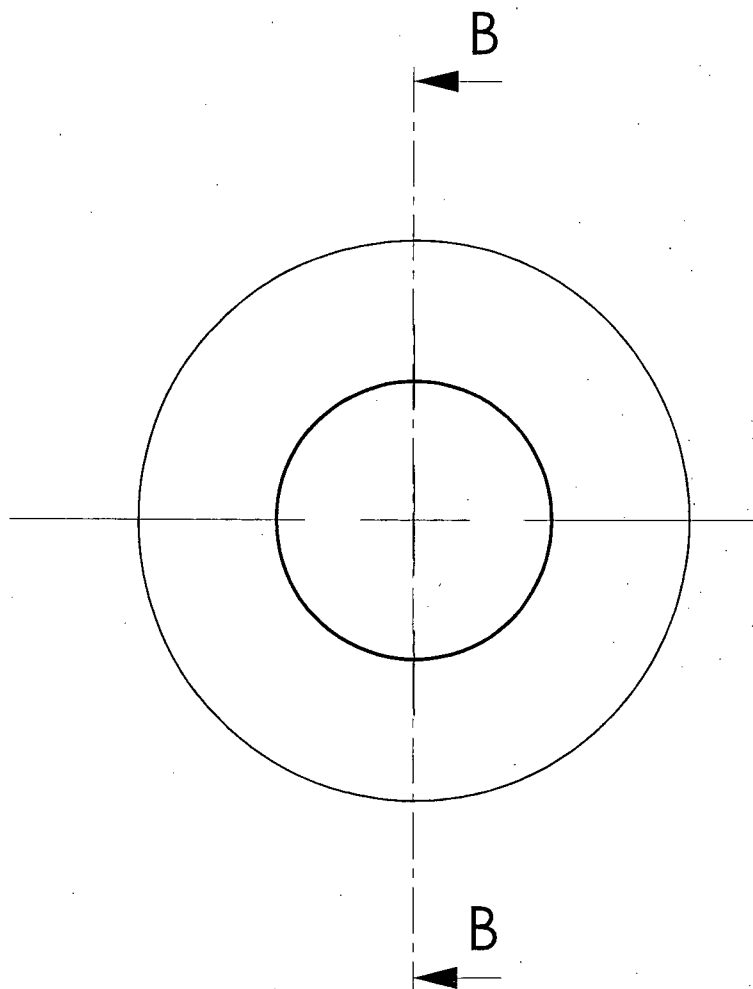
Notes:

Radioassay / QC Review

Date and Initials of Reviewer


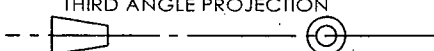
A. Any QC concerns or recommendations for this order?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
-------------------------------------------------------	------------------------------	-----------------------------	--

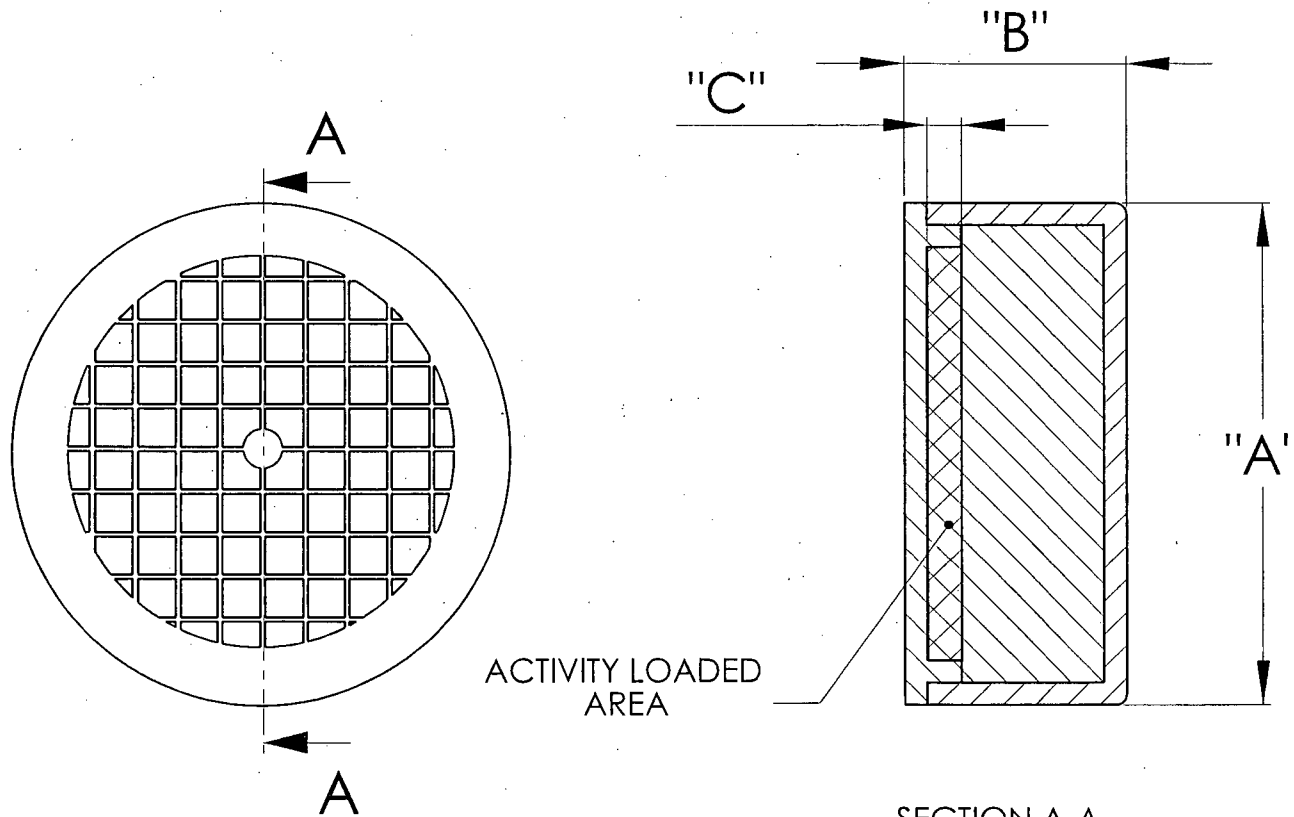
Notes:



SECTION B-B

4. PACKAGE AND IDENTIFY PART NUMBER THEREON
 3. SURFACE ROUGHNESS: 32 MICRON INCH
 2. REMOVE BURRS AND BREAK EDGES 0.005 MAX
 1. MATERIAL: 1/4" THK RED CAST ACRYLIC #2157
- NOTES: UNLESS OTHERWISE SPECIFIED

<div></div> <div>Eckert & Ziegler</div> <div>ANALYTICS</div> <div>ATLANTA, GEORGIA 30318</div>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE BUTTON 1/4"			
	TOLERANCES (UNLESS OTHERWISE SPECIFIED)		ME/CHECKER ◊		SERIES TITLE			
	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		ENGINEER ◊					
	THIRD ANGLE PROJECTION <div></div>		SCALE NONE	SIZE A	CAGE CODE -	DRAWING NO. E-XXX-BUT	REV	SHEET 1 OF 1
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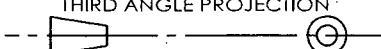
ACTIVITY LOADED
AREA

SECTION A-A
SCALE 6:5

2. PACKAGE AND IDENTIFY PART NUMBER THEREON
1. MATERIAL: SEE LEGEND SHT 2

NOTES: UNLESS OTHERWISE SPECIFIED

P/N

 Eckert & Ziegler ANALYTICS ATLANTA, , GEORGIA 30318	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE CARTRIDGE SOURCE ASSEMBLY			
	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		ME/CHECKER <>		SERIES TITLE			
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LEGEND					
	MODEL	DIM "A" MM	DIM "B" MM	ACTIVE MATERIAL DIM "C" MM	MATERIAL
	F & J "B" LIP	64.3	25.4	5-20	CHARCOAL
	F & J "C" LIPLESS	56.9	26.4	5-22	CHARCOAL
	F & J LOW METAL	63.9	25.5	5-20	CHARCOAL
	F & J TALL METAL	63.9	41.0	5-37	CHARCOAL
	F & J LAPEL	41.6	19.2	5-15	CHARCOAL
	BG-300	57.2	26.4	5-22	CHARCOAL
	CP-100 PLASTIC	57.4	26.3	5-22	CHARCOAL
	CP-100 METAL RING	57.3	26.4	5-22	CHARCOAL
	CP-200	57.5	26.4	5-22	CHARCOAL
	CESCO	58.1	24.5	5-20	CHARCOAL
	SCOTT	62.0	25.6	5-20	CHARCOAL
	HI-Q YELLOW PLASTIC	56.8	25.1	5-20	CHARCOAL
	HI-Q LOW METAL	64.2	24.5	5-20	CHARCOAL
	HI-Q TALL METAL	62.1	41.1	5-37	CHARCOAL
	SAIC DE-500 LAPEL	41.4	19.3	5-15	CHARCOAL
	RadecoRL-100	64.0	25.7	5-20	CHARCOAL
	MSA METAL CARTRIDGE	84.1	30.3	5-26	CHARCOAL
	SORRENTO	61.7	24.8	5-20	CHARCOAL
	F & J "B" LIP	64.3	25.4	5-20	ZEOLITE
	F & J "C" LIPLESS	56.9	26.4	5-22	ZEOLITE
	F & J LOW METAL	63.9	25.5	5-20	ZEOLITE
	F & J TALL METAL	63.9	41.0	5-37	ZEOLITE
	F & J LAPEL	41.6	19.2	5-15	ZEOLITE
	HI-Q YELLOW PLASTIC	56.8	25.1	5-20	ZEOLITE
	HI-Q LOW METAL	64.2	24.5	5-20	ZEOLITE
	HI-Q TALL METAL	62.1	41.1	5-37	ZEOLITE
	GY-130	57.3	26.2	5-22	ZEOLITE



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SIZE

DRAWN

CAGE CODE

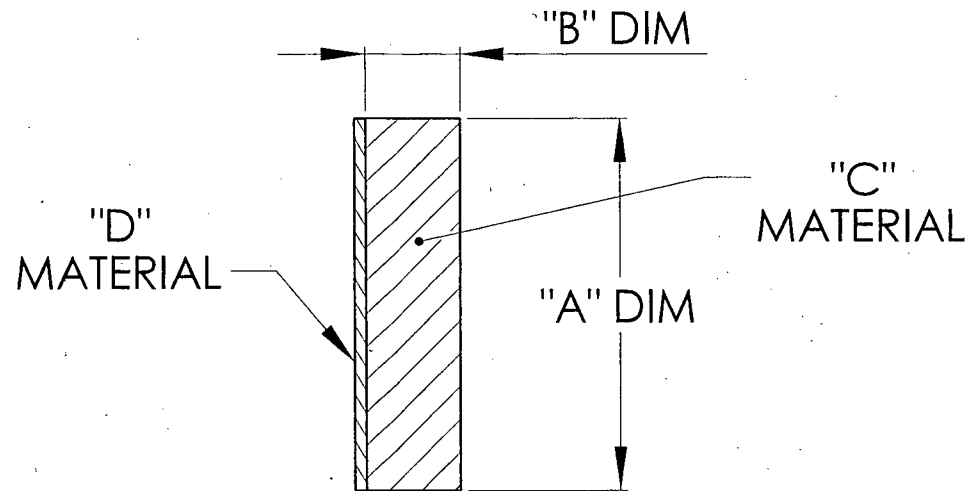
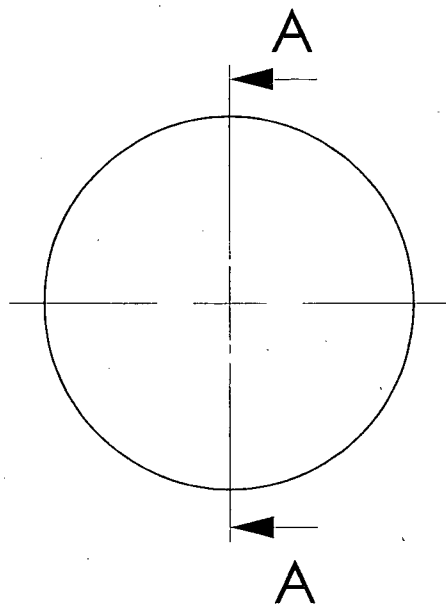
-

DRAWING NO.

E-XXX-CAR

REV

SHEET
2 OF 2




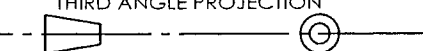
SECTION A-A

Material "D" to be glued to surface
Activity deposited on material "D"

3. PACKAGE AND IDENTIFY PART NUMBER THEREON
2. SURFACE ROUGHNESS: 32 MICRON INCH
1. REMOVE BURRS AND BREAK EDGES 0.005 MAX

NOTES: UNLESS OTHERWISE SPECIFIED

P/N

 Eckert & Ziegler ANALYTICS ATLANTA, . GEORGIA 30318	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE DISK SOURCE ASSEMBLY						
	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 () N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER <>		SERIES TITLE						
	THIRD ANGLE PROJECTION 		ENGINEER <>		SCALE	SIZE	CAGE CODE	DRAWING NO.	REV	SHEET	
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DISK LEGEND			
DIM "A" (MM)	DIM "B" (MM)	MATERIAL (C)	MATERIAL (D)
47	0.64	RED CAST ACRYLIC	TAPE
47	0.64	RED CAST ACRYLIC	MYLAR
25.4	0.64	RED CAST ACRYLIC	TAPE
25.4	0.64	RED CAST ACRYLIC	MYLAR
47.1	0.9	STAINLESS STEEL	TAPE
47.1	0.9	STAINLESS STEEL	MYLAR
47.1	0.9	ALUMINUM	TAPE
47.1	0.9	ALUMINUM	MYLAR

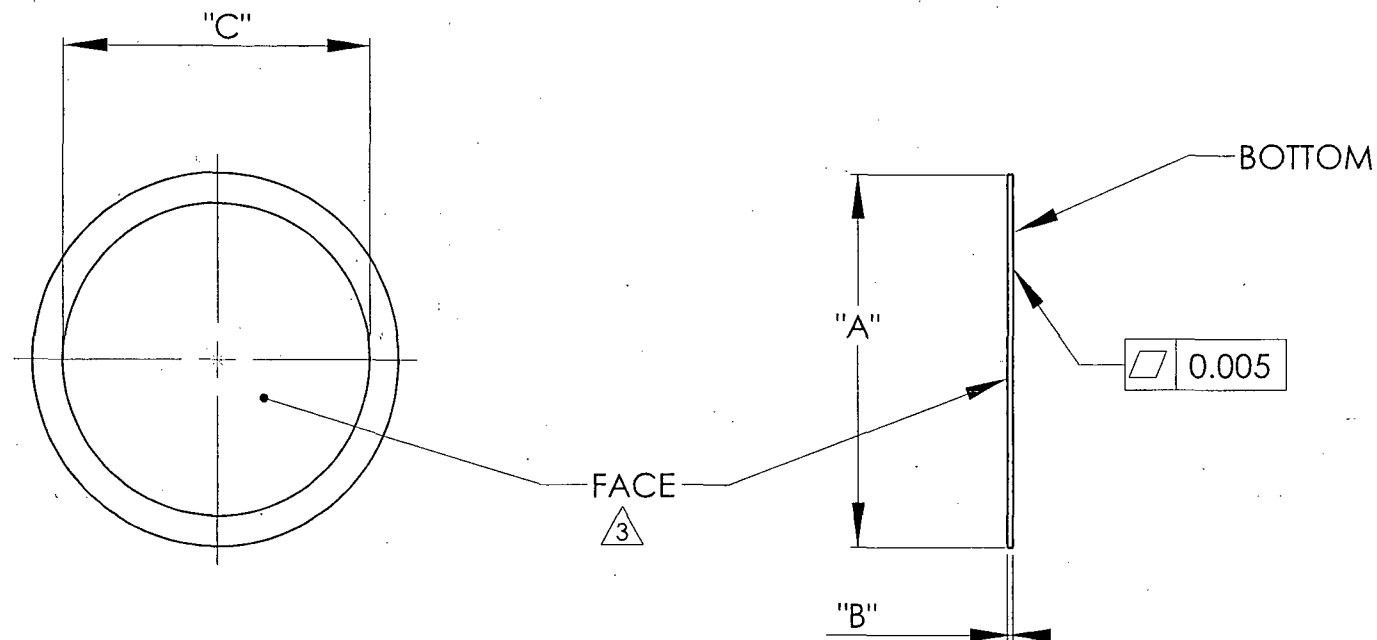


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SIZE-XXX-DISDRAWING

REV
CAGE CODE

SHEET
2 OF 2



5. SURFACE FINISH: SEE LEGEND

4. PACKAGE AND IDENTIFY PART NUMBER THEREON

3 SURFACE ROUGHNESS: $\sqrt{16}$ NO SCRATCHES, DINGS
VOIDS OR MARKINGS

2. REMOVE BURRS AND BREAK EDGES 0.003 MAX

1. MATERIAL: N/A SEE LEGEND

NOTES: UNLESS OTHERWISE SPECIFIED

ELECTRODEPOSITED SOURCE LEGEND

DIM "A" (MM)	DIM "B" (MM)	DIM "C" (MM)	MATERIAL
47.1	0.65	5-45	STAINLESS STEEL MIRROR POLISHED OR BEAD BLASTED
24.1	0.90	5-24.1	STAINLESS STEEL MIRROR POLISHED OR BEAD BLASTED



Eckert & Ziegler

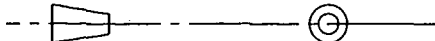
ANALYTICS

ATLANTA, GEORGIA 30318

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-
SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.

TOLERANCES (UNLESS OTHERWISE SPECIFIED)
 X.XXX \pm .002 INCH ANGULAR TOLERANCE OF $0^{\circ}\pm 30'$
 X.XX \pm .005 INCH FRACTIONAL DIMENSIONS $\pm 1/32"$
 X.X \pm .03 INCH REFERENCE DIMENSIONS () N/A
 X. \pm .1 INCH SURFACE ROUGHNESS μ INCH MAX
 ALL DIMENSIONS ARE FINISHED DIMENSIONS

THIRD ANGLE PROJECTION



DRAWN WDJ

ME/CHECKER

<>

ENGINEER

<>

SCALE

NONE

SIZE

A

TITLE

ELECTRODEPOSITED

SERIES TITLE

CAGE CODE

-

DRAWING NO.

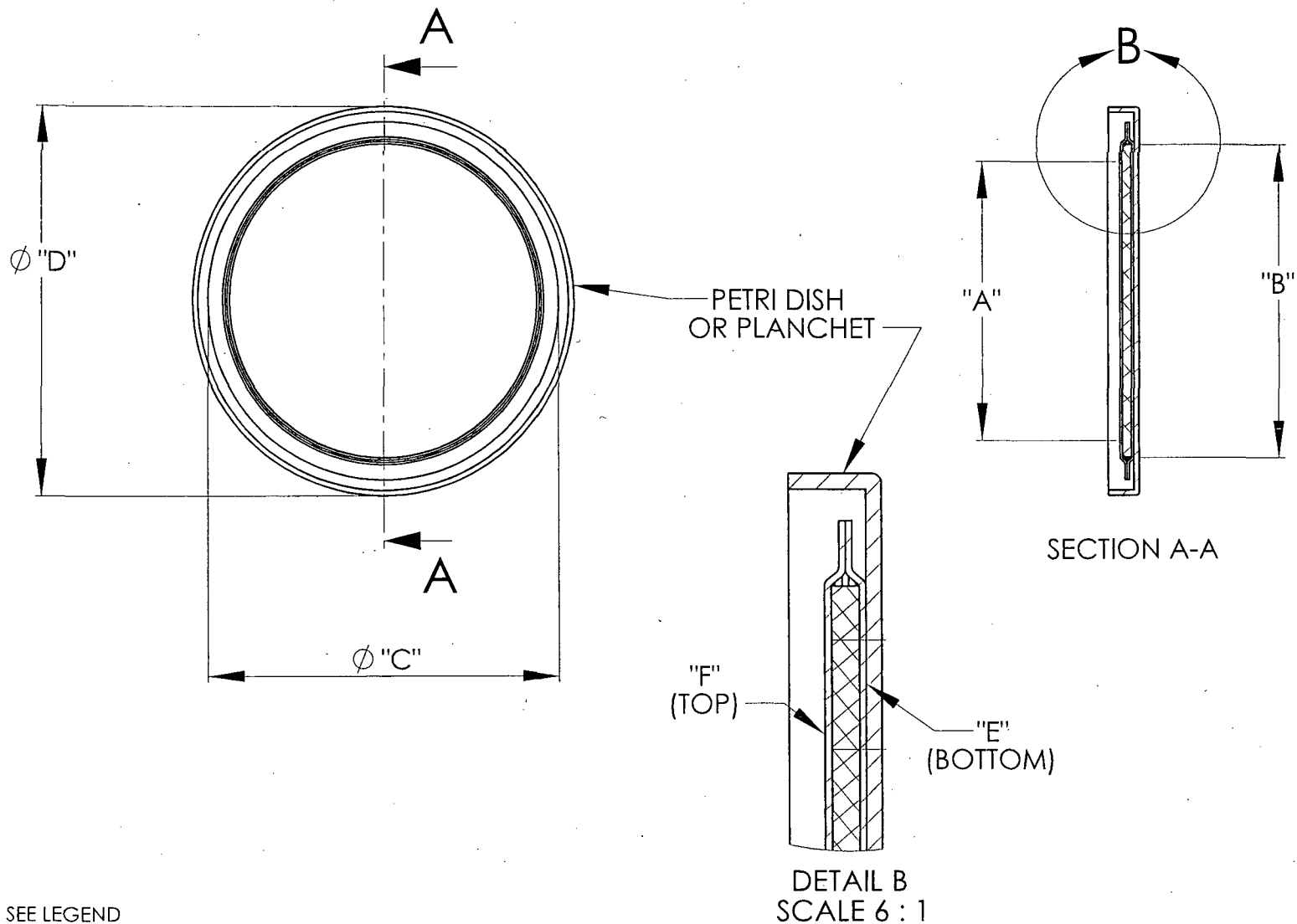
E-XXX-ELE

REV

SHEET

1 OF 1

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2. SURFACE FINISH: SEE LEGEND
1. MATERIAL: N/A SEE LEGEND

NOTES: UNLESS OTHERWISE SPECIFIED



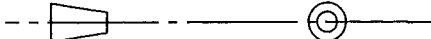
Eckert & Ziegler
ANALYTICS

ATLANTA, , GEORGIA 30318

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-
SIZES. METRIC UNITS (mm) ARE IN MILLIMETERS.

TOLERANCES (UNLESS OTHERWISE SPECIFIED)
X.XXX \pm .002 INCH ANGULAR TOLERANCE OF $0^{\circ}\pm 30'$
X.XX \pm .005 INCH FRACTIONAL DIMENSIONS $\pm 1/32''$
X.X \pm .03 INCH REFERENCE DIMENSIONS (I) N/A
X. \pm .1 INCH SURFACE ROUGHNESS μ INCH MAX
ALL DIMENSIONS ARE FINISHED DIMENSIONS

THIRD ANGLE PROJECTION



DRAWN
WDJ

ME/CHECKER
<>

ENGINEER
<>

SCALE
NONE

SIZE
A

TITLE

FILTERS IN PLANCHET OR PETRI DISH

SERIES TITLE

CAGE CODE

-

DRAWING NO.

E-XXX-FIL

REV

SHEET
1 OF 2

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LEGEND						
MODEL FILTER IN	DIM "A" (MM)	DIM "B" (MM)	DIM "C" (MM)	DIM "D" (MM)	MATERIAL "E" BOTTOM	MATERIAL "F" TOP
SNAP FALCON PETRI	45	45	47	48	TAPE	MYLAR
SNAP FALCON PETRI	44	44	47	48	TAPE	TAPE
TL FALCON PETRI	49	49	51	51	TAPE	MYLAR
TL FALCON PETRI	47	47	51	51	TAPE	TAPE
MILLIPORE PETRI	45	45	47	48	TAPE	MYLAR
MILLIPORE PETRI	44	44	47	48	TAPE	TAPE
PAUL GELMAN PETRI	45	45	47	47	TAPE	MYLAR
PAUL GELMAN PETRI	44	44	47	47	TAPE	TAPE
ALL PETRI SLIDES	45	45	47	48	TAPE	MYLAR
ALL PETRI SLIDES	44	44	47	48	TAPE	TAPE
TSB SS PLANCHET	47	47	49	49	TAPE	MYLAR
TSB SS PLANCHET	45	45	49	49	TAPE	TAPE
TRB SS PLANCHET	47	47	49	49	TAPE	MYLAR
TRB SS PLANCHET	45	45	49	49	TAPE	MYLAR
LSB SS PLANCHET	47	47	49	49	TAPE	MYLAR
LSB SS PLANCHET	45	45	49	49	TAPE	TAPE
LRB SS PLANCHET	47	47	49	49	TAPE	MYLAR
LRB SS PLANCHET	45	45	49	49	TAPE	TAPE
TSB AL PLANCHET	47	47	49	49	TAPE	MYLAR
TSB AL PLANCHET	45	45	49	49	TAPE	TAPE
TRB AL PLANCHET	47	47	49	49	TAPE	MYLAR
TRB AL PLANCHET	45	45	49	49	TAPE	TAPE
LSB AL PLANCHET	47	47	49	49	TAPE	MYLAR
LSB AL PLANCHET	45	45	49	49	TAPE	TAPE
FILTER IN TAPE	47	47	54	54	TAPE	TAPE
FILTER IN TAPE	50	50	57	57	TAPE	TAPE



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SIZE

DRAWN

CAGE CODE

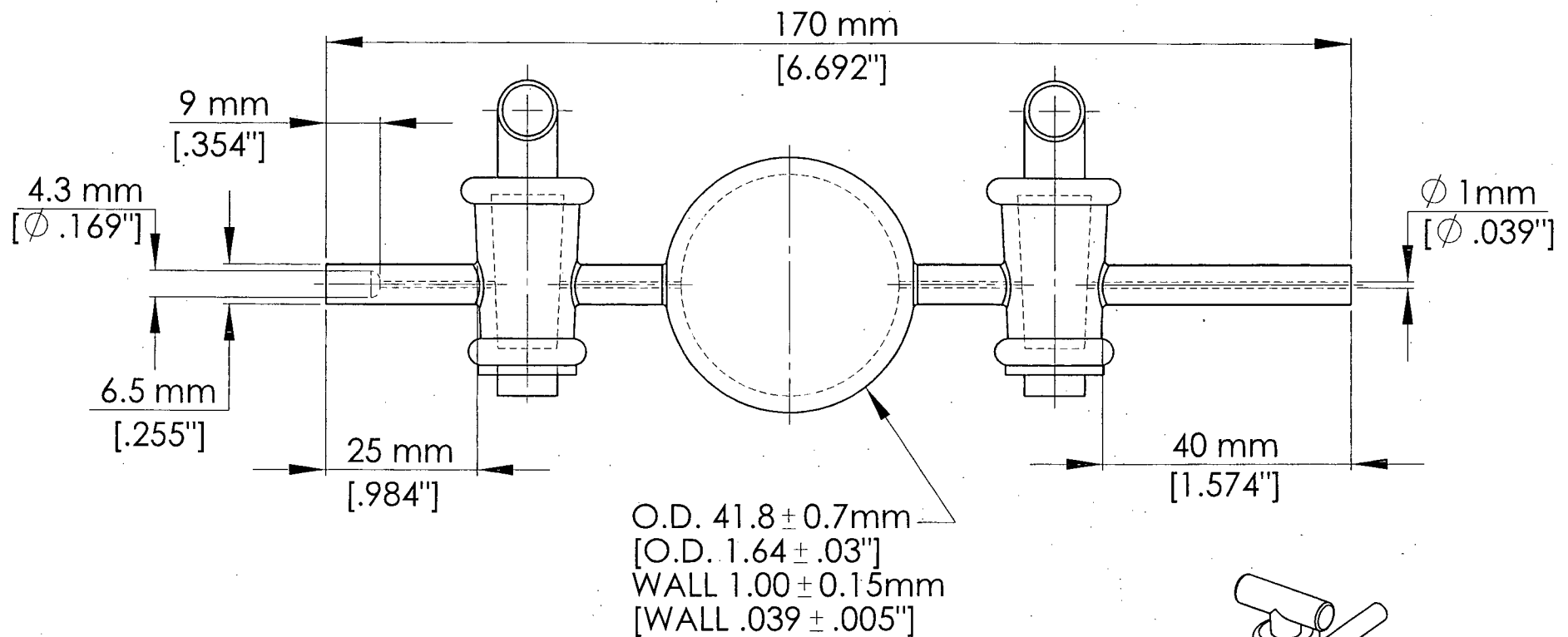
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DRAWING NO.

E-XXX-FIL

REV


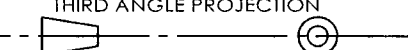
SHEET
2 OF 2

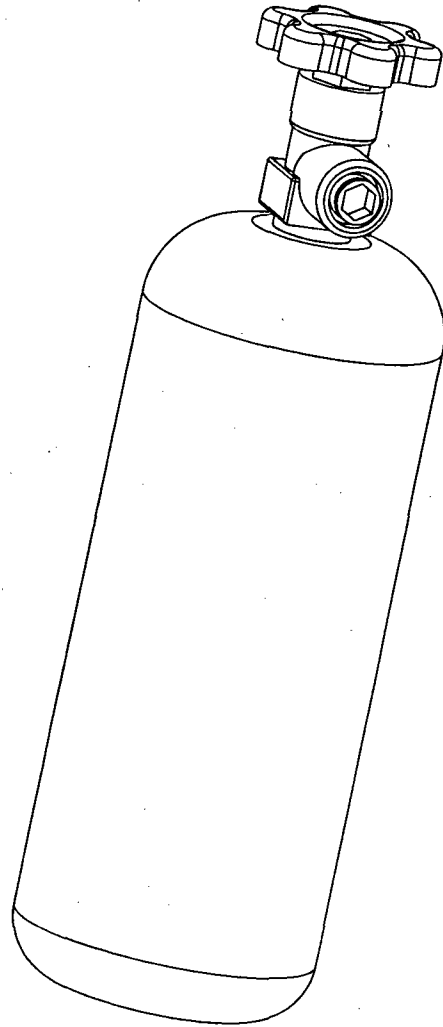


2. PACKAGE AND IDENTIFY PART NUMBER THEREON
1. MATERIAL: GLASS

NOTES: UNLESS OTHERWISE SPECIFIED

P/N



<div></div> <div>Eckert & Ziegler</div> <div>ANALYTICS</div> <div>ATLANTA, GEORGIA 30318</div>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE GLASS SPHERE				
	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		ME/CHECKER <>		SERIES TITLE				
			ENGINEER <>						
	THIRD ANGLE PROJECTION <div></div>		SCALE NONE	SIZE A	CAGE CODE 32993	DRAWING NO. E-XXX-GAS	REV	SHEET 1 OF 1	
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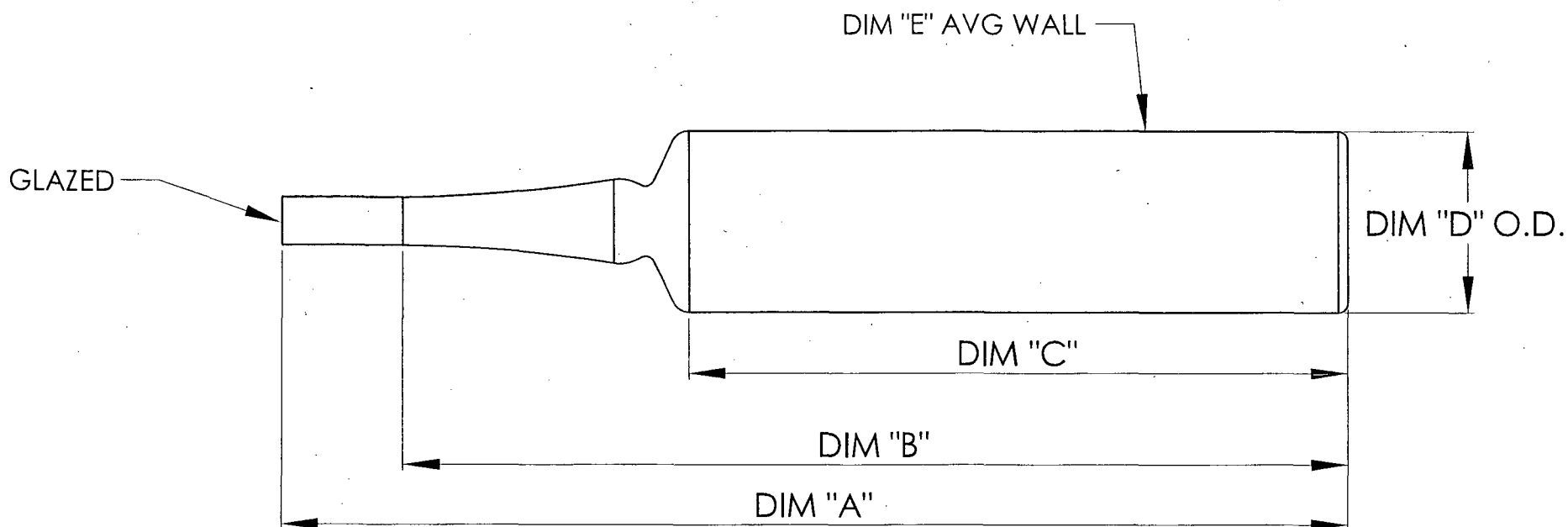
2. PACKAGE AND IDENTIFY PART NUMBER THEREON
1. MATERIAL: SEE LEGEND SHT 2

NOTES: UNLESS OTHERWISE SPECIFIED

MODEL	VOLUME, L	PRESSURE, PSI	PRESSURIZED GAS
LECTURE BOTTLE	0.5	750	NITROGEN
2.3L STEEL CYLINDER	2.3	700	NITROGEN

 Eckert & Ziegler ANALYTICS ATLANTA, , GEORGIA 30318	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE GAS CYLINDER			
	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 (J) N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER <>		SERIES TITLE			
			ENGINEER <>					
	THIRD ANGLE PROJECTION 		SCALE NONE	SIZE A	CAGE CODE -	DRAWING NO. E-XXX-GAS	REV	SHEET 1 OF 1

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2. PACKAGE AND IDENTIFY PART NUMBER THEREON

1. MATERIAL: GLASS

NOTES: UNLESS OTHERWISE SPECIFIED

GLASS VIALS					
MODEL	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"
2	75±0.5	60.5	30±1	11.62	0.55
5	84±0.5	71	37±1	16.00	0.65
10	107±0.5	91	52±1	18.80	0.70
20	135±0.5	120	75±1	22.25	0.80
50	175±0.5	165	110±2	29.00	1.20

 **Eckert & Ziegler**
ANALYTICS
ATLANTA, GEORGIA 30318

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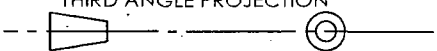
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-
SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.

TOLERANCES (UNLESS OTHERWISE SPECIFIED)

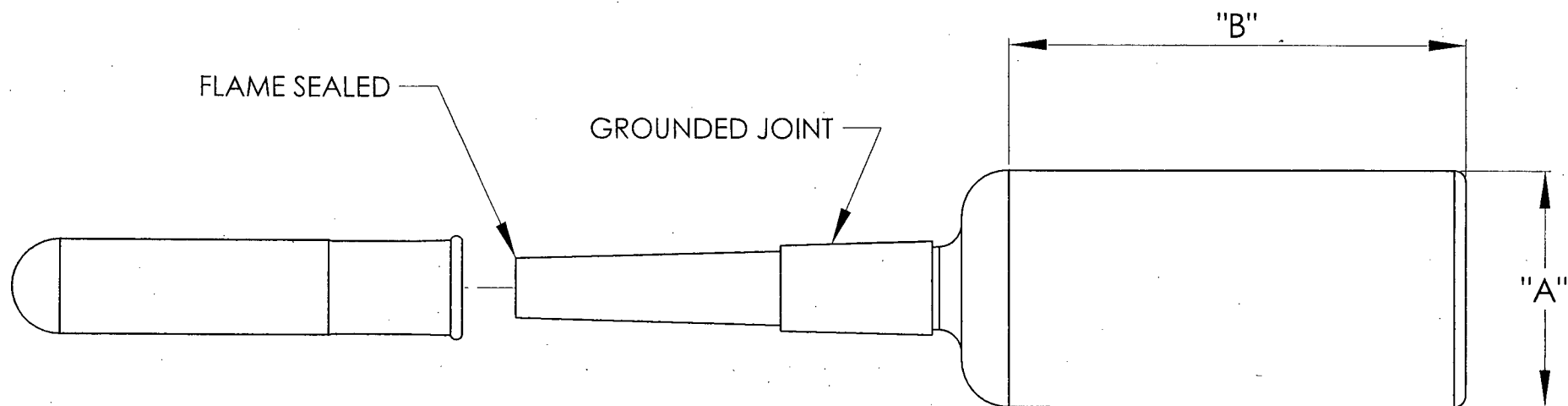
X.XXX	± .002	INCH	ANGULAR TOLERANCE OF 0°±30'
X.XX	± .005	INCH	FRACTIONAL DIMENSIONS ± 1/32"
X.X	± .03	INCH	REFERENCE DIMENSIONS (J) N/A
X.	± .1	INCH	SURFACE ROUGHNESS μINCH MAX

ALL DIMENSIONS ARE FINISHED DIMENSIONS

THIRD ANGLE PROJECTION



DRAWN WDJ	TITLE GLASS VIALS				
ME/CHECKER <>					
ENGINEER <>	SERIES TITLE				
SCALE NONE	SIZE A	CAGE CODE -	DRAWING NO. E-XXX-LIQ	REV	SHEET 1 OF 1



2. PACKAGE AND IDENTIFY PART NUMBER THEREON
1. MATERIAL: GLASS

NOTES: UNLESS OTHERWISE SPECIFIED

GLASS REAGENT BOTTLE LEGEND				
MODEL	DIM "A" (MM)	DIM "B" (MM)	VOLUME (ML)	MATERIAL
100	57	85	100	GLASS
250	64	135	250	GLASS
500	90	120	500	GLASS
1000	110	165	1000	GLASS



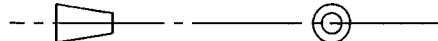
Eckert & Ziegler
ANALYTICS

ATLANTA, GEORGIA 30318

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
WDJ

ME/CHECKER
<>

ENGINEER
<>

SCALE
NONE

SIZE
A

TITLE

GLASS REAGENT BOTTLE

SERIES TITLE

CAGE CODE

-

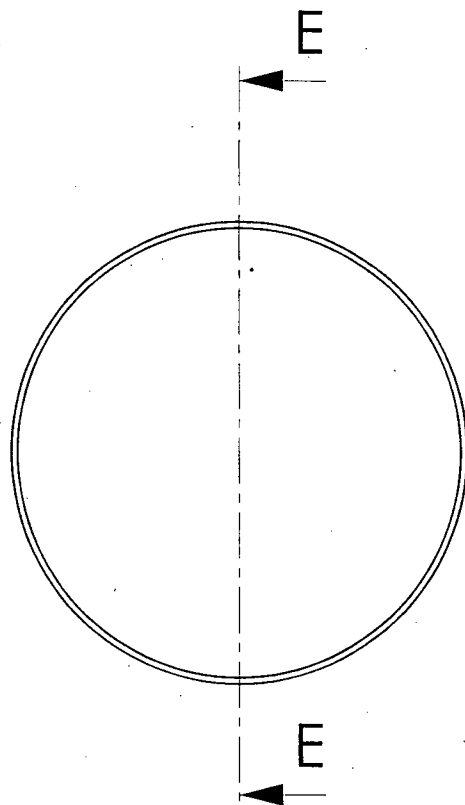
DRAWING NO.

E-XXX-LIQ

REV

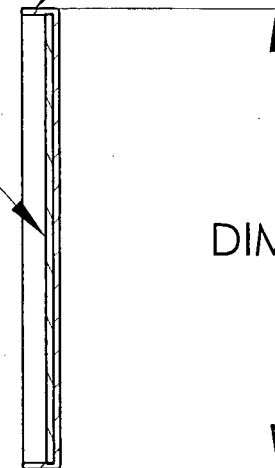
SHEET
1 OF 1

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MYLAR
WITH DEPOSITED
ACTIVITY


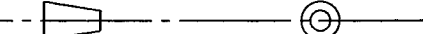
PLANCHET



DIM A

SECTION E-E

4. PACKAGE AND IDENTIFY PART NUMBER THEREON
 3. SURFACE ROUGHNESS: 32 MICRON INCH
 2. REMOVE BURRS AND BREAK EDGES 0.005 MAX
 1. MATERIAL:
- NOTES: UNLESS OTHERWISE SPECIFIED

 <div>Eckert & Ziegler</div> <div>ANALYTICS</div> <div>ATLANTA, . GEORGIA 30318</div>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE SIMULATED EVAPORATED LIQUID					
	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		ME/CHECKER <>		SERIES TITLE					
			ENGINEER <>							
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LEGEND	
MODEL SIMULATED EVAPORATED LIQUID	DIM "A" (MM)
TSB SS PLANCHET	49
TSB SS PLANCHET	49
TRB SS PLANCHET	49
TRB SS PLANCHET	49
LSB SS PLANCHET	49
LSB SS PLANCHET	49
LRB SS PLANCHET	49
LRB SS PLANCHET	49
TSB AL PLANCHET	49
TSB AL PLANCHET	49
TRB AL PLANCHET	49
TRB AL PLANCHET	49
LSB AL PLANCHET	49
LSB AL PLANCHET	49



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SIZE

DRAWN

CAGE CODE

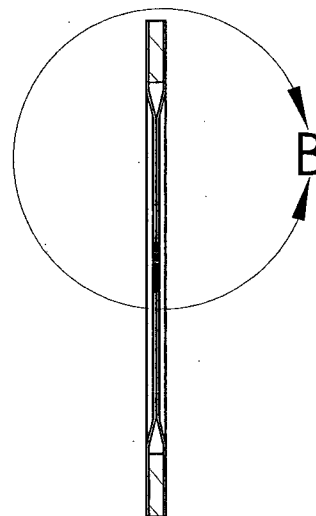
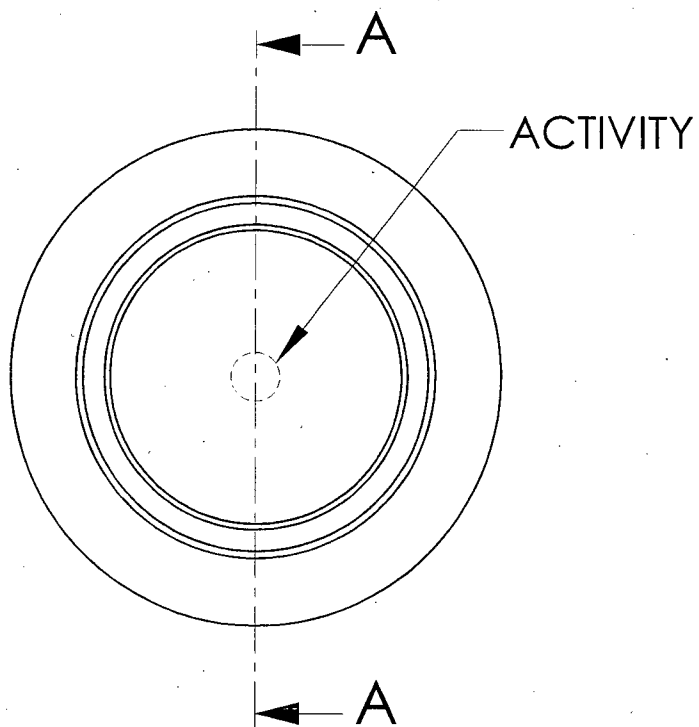
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DRAWING NO.

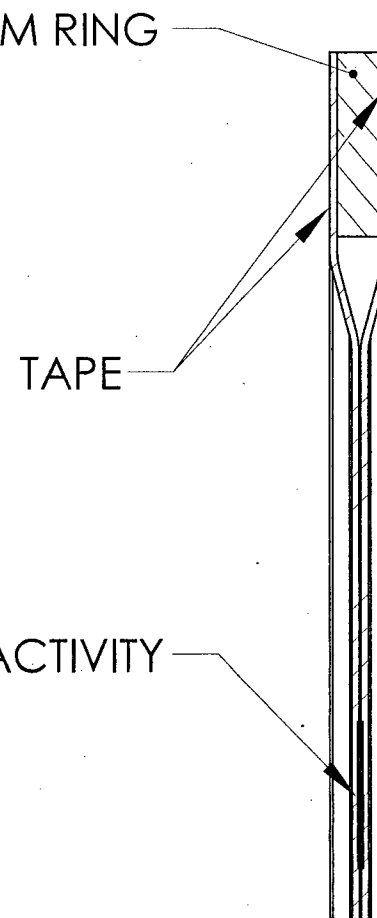
E-XXX-PLN

REV

SHEET
2 OF 2




SECTION A-A



DETAIL B
SCALE 4 : 1

4. PACKAGE AND IDENTIFY PART NUMBER THEREON
3. SURFACE ROUGHNESS: 32 MICRON INCH
2. REMOVE BURRS AND BREAK EDGES 0.005 MAX
1. MATERIAL:

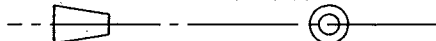
NOTES: UNLESS OTHERWISE SPECIFIED

 **Eckert & Ziegler**
ANALYTICS
ATLANTA, , GEORGIA 30318

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 (J) N/A
X.	± .1	INCH SURFACE ROUGHNESS μINCH MAX
ALL DIMENSIONS ARE FINISHED DIMENSIONS		

THIRD ANGLE PROJECTION



DRAWN
WDJ

ME/CHECKER
<>

ENGINEER
<>

SCALE
NONE

SIZE
A

TITLE

POINT SOURCE ON ALUMINUM RING

SERIES TITLE

CAGE CODE

-

DRAWING NO.

E-XXX-PNT

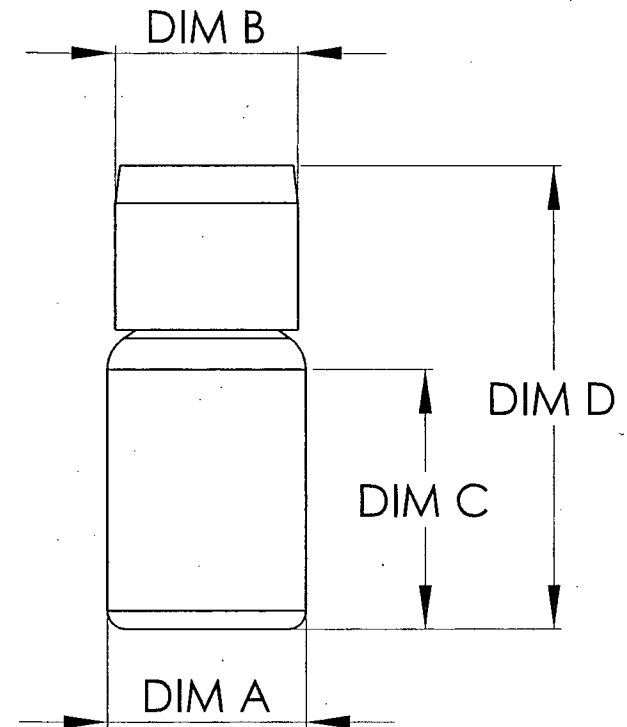
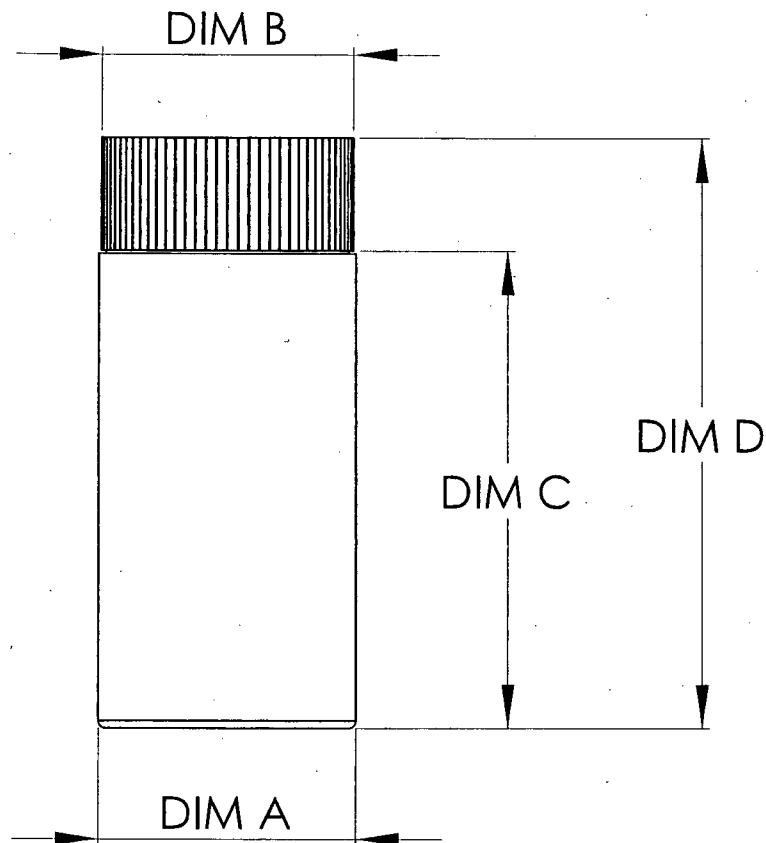
REV

-

SHEET

1 OF 1

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FLAME SEALED

3. PACKAGE AND IDENTIFY PART NUMBER THEREON
2. SURFACE ROUGHNESS: 32 MICRON INCH
1. MATERIAL:

NOTES: UNLESS OTHERWISE SPECIFIED

LIQUID SCINTILLATION VIAL						
NO	MODEL	DIM A [MM]	DIM B [MM]	DIM C [MM]	DIM D [MM]	MATERIAL
1	20 ml	26.5	26.0	48.0	60.6	PLASTIC
2	20 ml	27.3	24.9	44.4	61	GLASS
3	7 ml	16.5	18.5	42.8	52.7	PLASTIC
4	7 ml	16.7	15.2	44.4	57.8	GLASS
5	20ml fsv	27.5	25.4	37.1	63	GLASS FLAME SEAL

 **Eckert & Ziegler**
ANALYTICS
ATLANTA, GEORGIA 30318

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 (J) N/A
 X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX
 ALL DIMENSIONS ARE FINISHED DIMENSIONS

DRAWN
WDJ

ME/CHECKER
<>

ENGINEER
<>

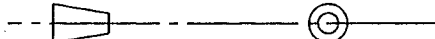
TITLE

LSV SOURCE ASSEMBLY

SERIES TITLE

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THIRD ANGLE PROJECTION



SCALE
NONE

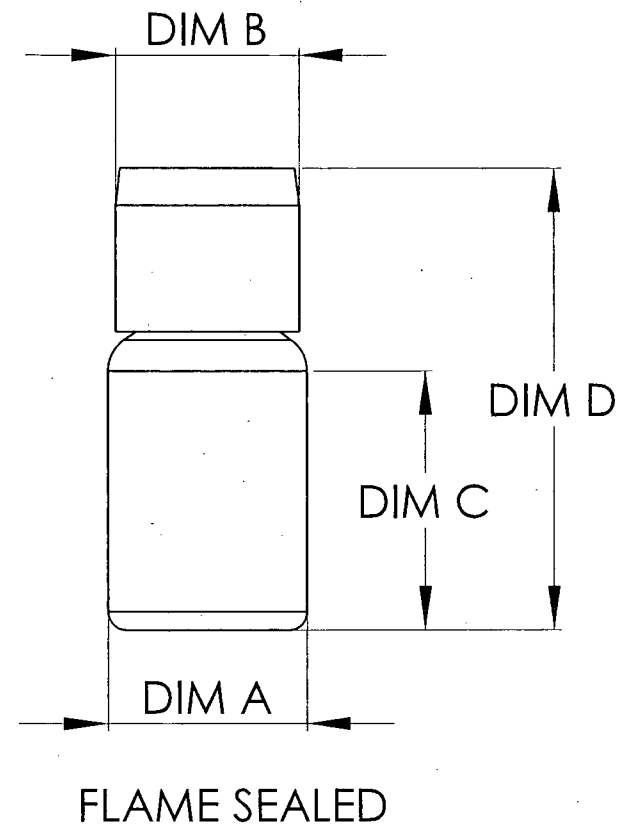
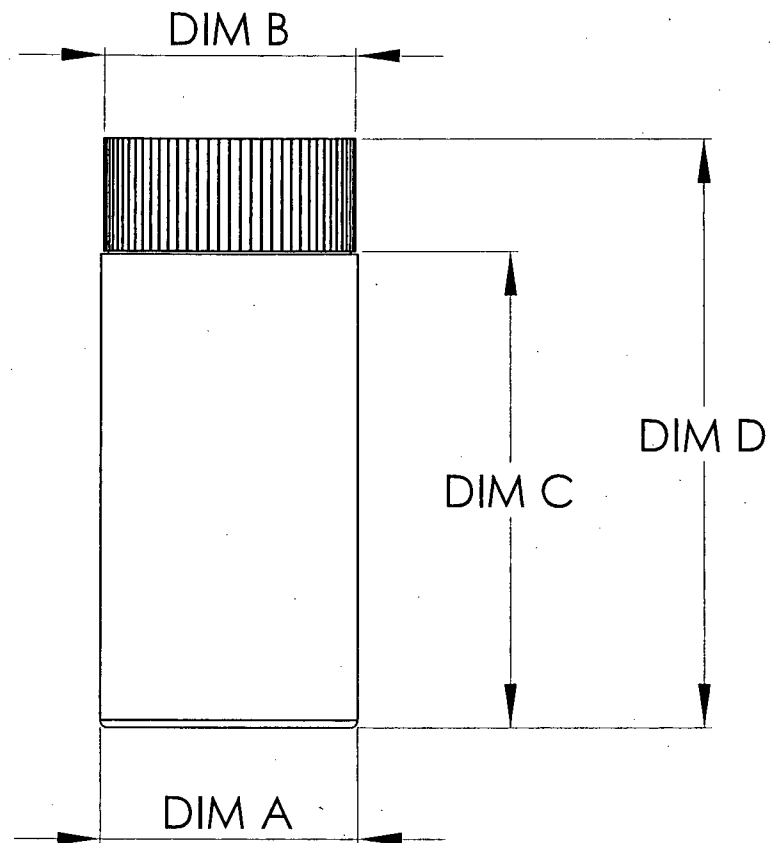
SIZE
A

CAGE CODE
-

DRAWING NO.
E-XXX-QUE

REV

SHEET
1 OF 1



3. PACKAGE AND IDENTIFY PART NUMBER THEREON
 2. SURFACE ROUGHNESS: 32 MICRON INCH
 1. MATERIAL:

NOTES: UNLESS OTHERWISE SPECIFIED

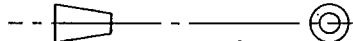
LIQUID SCINTILLATION VIAL						
NO	MODEL	DIM A [MM]	DIM B [MM]	DIM C [MM]	DIM D [MM]	MATERIAL
1	20 ml	26.5	26.0	48.0	60.6	PLASTIC
2	20 ml	27.3	24.9	44.4	61	GLASS
3	7 ml	16.5	18.5	42.8	52.7	PLASTIC
4	7 ml	16.7	15.2	44.4	57.8	GLASS
5	20ml fsv	27.5	25.4	37.1	63	GLASS FLAME SEAL

 **Eckert & Ziegler**
ANALYTICS
 ATLANTA, GEORGIA 30318

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
WDJ

ME/CHECKER
 <>

ENGINEER
 <>

SCALE
NONE

SIZE
A

TITLE

LSV SOURCE ASSEMBLY

SERIES TITLE

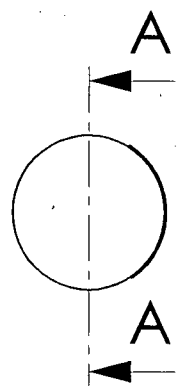
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DRAWING NO.
E-XXX-UNQ

REV

SHEET
1 OF 1

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ACTIVITY

5

EPOXY FILL

4

EPOXY CAP TO BODY

4

2 CAP

2

STICKER

3

ROD

1

5.00 / 3.00

4.88

0.50



0.63

0.50

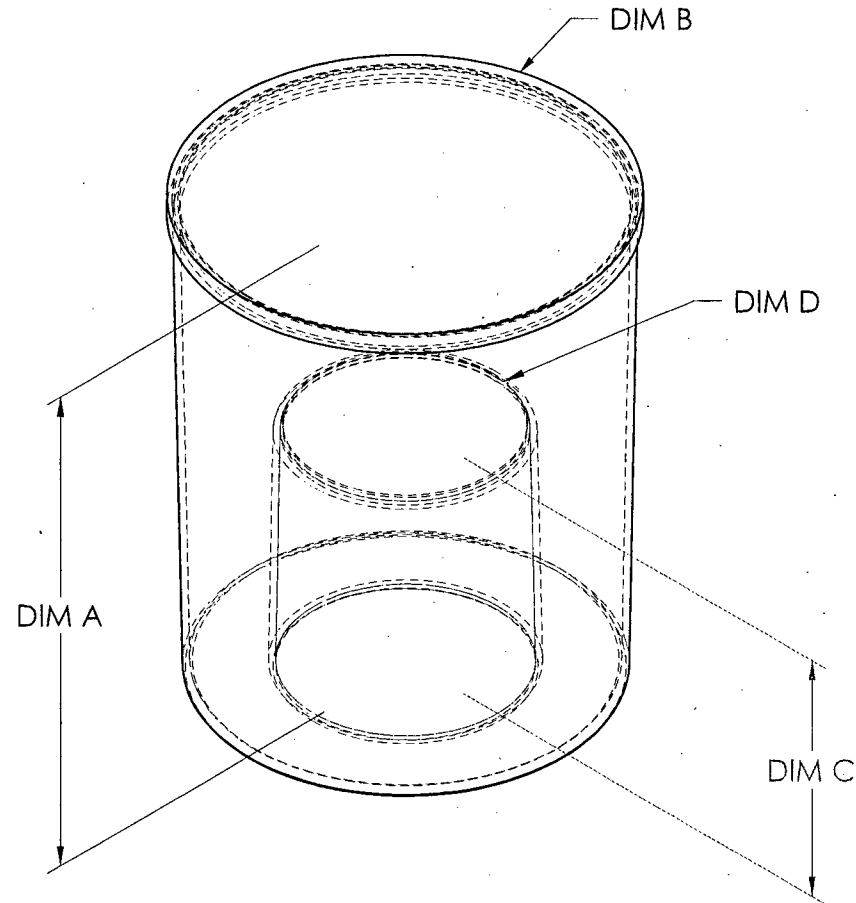
PARTIAL SECTION A-A

ITEM NO.	DESCRIPTION	QTY.
1	ROD	1
2	ROD CAP	1
3	STICKER	1
4	EPOXY OR EQUIVALENT	A/R
5	ACTIVITY	A/R

1. MATERIAL: ASSEMBLY COMPLETE FOR ENGINEERING DRAWING. APPLY EPOXY AND CURE AS REQUIRED.
NOTES: UNLESS OTHERWISE SPECIFIED

 <div>Eckert & Ziegler</div> <div>ANALYTICS</div> <div>ATLANTA, , GEORGIA 30318</div>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE ROD SOURCE ASSEMBLY				
	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 (J) N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER <>		SERIES TITLE				
			ENGINEER <>						
	THIRD ANGLE PROJECTION 		SCALE NONE	SIZE A	CAGE CODE -	DRAWING NO. E-XXX-ROD	REV	SHEET 1 OF 1	
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SEE MARINELLI BEAKER SIZE CONFIGURATION TABLE



3. PACKAGE AND IDENTIFY PART NUMBER THEREON
2. BEAKER AND CAP SUPPLIED AS A MATCHED SET.
1. MATERIAL: CONTAINER- POLYPROPYLENE, CAP- POLYETHYLENE
(RECOMMENDED VENDOR GA-MA & ASSOCIATES, INC..)

NOTES: UNLESS OTHERWISE SPECIFIED

MARINELLI BEAKER

 Eckert & Ziegler Analytics ATLANTA, GEORGIA 30318	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.	DRAWN WDJ	TITLE MARINELLI BEAKER GAMMA SOURCE				
	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	ME/CHECKER -					SERIES TITLE
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MARINELLI BEAKER SIZE CONFIGURATION TABLE

	MODEL	DETECTOR "ENDCAP" DIA mm (IN)	DIM A mm (IN)	DIM B mm (IN)	DIM C mm (IN)	DIM D mm (IN)	FREEBOARD VOLUME (L)
1	443016 250 mL	Ø 76 (3.00)	65 (2.6)	Ø 116 (4.6)	38 (1.5)	Ø 78 (3.1)	0.235
2	523N-E 500 mL	Ø 57 (2.25)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 58 (2.30)	---
3	527G-E 500 mL	Ø 70 (2.75)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 71 (2.80)	0.50
4	530G-E 500 mL	Ø 76 (3.00)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 77 (3.03)	0.40
5	533N 500 mL	Ø 82 (3.25)	117 (4.6)	Ø 127 (5.0)	75 (2.9)	Ø 84 (3.30)	0.54
6	125G 1 LITER	Ø 65 (2.56)	152 (6.0)	Ø 127 (5.0)	76 (3.0)	Ø 65 (2.55)	1.02
7	127G 1 LITER	Ø 70 (2.75)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 71 (2.78)	0.97
8	130G 1 LITER	Ø 76 (3.00)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 76 (3.05)	0.95
9	133N 1 LITER	Ø 82 (3.25)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 84 (3.33)	0.85
10	138G 1 LITER	Ø 95 (3.75)	165 (6.5)	Ø 157 (6.2)	101 (4.0)	Ø 96 (3.78)	1.60
11	227G 2 LITER	Ø 70 (2.75)	165 (6.5)	Ø 157 (6.2)	76 (3.0)	Ø 71 (2.78)	1.80
12	230G 2 LITER	Ø 76 (3.00)	165 (6.5)	Ø 157 (6.2)	76 (3.0)	Ø 79 (3.12)	1.74
13	233N 2 LITER	Ø 82 (3.25)	165 (6.5)	Ø 150 (6.1)	76 (3.0)	Ø 84 (3.30)	1.68
14	430G 4 LITER	Ø 76 (3.00)	178 (7.0)	Ø 200 (7.9)	76 (3.0)	Ø 77 (3.05)	3.76
15	433N 4 LITER	Ø 82 (3.25)	178 (7.0)	Ø 196 (7.7)	76 (3.0)	Ø 84 (3.33)	3.69
16	438G 4 LITER	Ø 95 (3.75)	178 (7.0)	Ø 200 (7.9)	101 (4.0)	Ø 96 (3.78)	3.36
17	445N 4 LITER	Ø 112 (4.40)	175 (6.9)	Ø 200 (7.9)	104 (4.1)	Ø 113 (4.44)	3.06
18	132G 1 LITER	Ø 83 (3.25)	130 (5.1)	Ø 170 (6.7)	71 (2.8)	Ø 84 (3.32)	1.10
19	141G 1 LITER	Ø 102 (4.00)	165 (6.5)	Ø 157 (6.2)	102 (4.0)	Ø 103 (4.08)	1.46
20	190G 1 LITER	Ø 90 (3.54)	130 (5.1)	Ø 170 (6.7)	102 (4.0)	Ø 91 (3.58)	1.00
21	441G 4 LITER	Ø 102 (4.00)	178 (7.0)	Ø 201 (7.9)	102 (4.0)	Ø 103 (4.07)	3.28
22	448G 4 LITER	Ø 121 (4.75)	178 (7.0)	Ø 201 (7.9)	107 (4.2)	Ø 121 (4.79)	2.88
23	538G 500 mL	Ø 95 (3.75)	127 (5.0)	Ø 140 (5.5)	84 (3.3)	Ø 96 (3.78)	0.79
24	580G 500 mL	Ø 80 (3.15)	117 (4.6)	Ø 130 (5.1)	71 (2.8)	Ø 81 (3.19)	0.58
25	590G 500 mL	Ø 90 (3.54)	117 (4.6)	Ø 130 (5.1)	76 (3.0)	Ø 91 (3.60)	0.44
26	541G 500 mL	Ø 102 (4.00)	117 (4.6)	Ø 130 (5.1)	84 (3.3)	Ø 102 (4.03)	0.48
27	463316 250 mL	Ø 83 (3.25)	66 (2.6)	Ø 118 (4.63)	38 (1.5)	Ø 85 (3.33)	0.222



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SIZE

DRAWN
WDJ

CAGE CODE
-

DRAWING NO.
E-XXX-SAN

REV
-

SHEET
2 OF 3

SOURCE MATRIX CONFIGURATION TABLE

DENSITY	DESCRIPTION	MATRIX
0.13 g/cc	VERMICULITE	SIEVED ZONDITE VERMICULITE
0.44 g/cc	CORN COBB GRIT	CORN COBB GRIT
0.6 G/cc	COFFEE GROUNDS	GROUND COFFEE BEANS
1.0 g/cc	PULVERIZED SOIL	COSTUM PULVERIZED SOIL
1.15 g/cc	REGULAR RESIN	RESIN, MR-11109. CATALYST METHYL ETHYL KETONE PEROXIDE, MA
1.6 g/cc	SAND	ROLLO SILIA SAND. WASHED DRIED SIZED -40 MESH
1.6 g/cc	SIEVED GRIFFIN SOIL	SIEVED GRIFFIN SOIL
1.2 - 2.0 g/cc	RESIN MIX WITH MARBLE	MARBLEND MARBLE POWDER AND RESIN



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BILL OF MATERIAL

DRAWN
WDJ

CAGE CODE
-

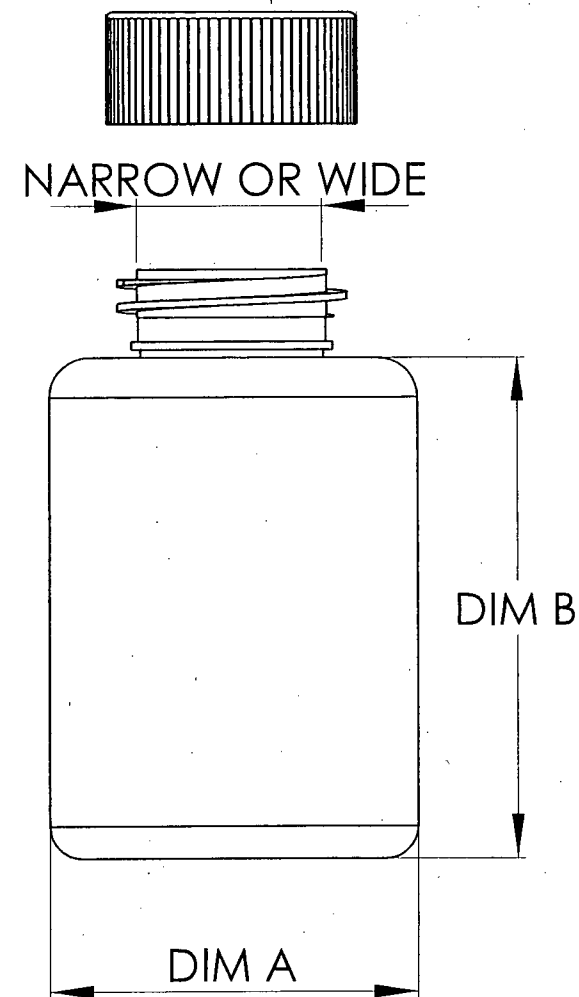
DRAWING NO.
E-XXX-SAN

REV
-

SHEET
3 OF 3

BOTTLES LEGEND

DASH NO.	MOUTH SIZE	A-DIA MM/INCH	B-SIZE MM/INCH
1	30ml NARROW	34.9 (1.375)	63.5 (2.50)
2	60 ml NARROW	38.1 (1.5)	82.55 (3.25)
3	125 ml NARROW	50.8 (2.0)	101.6 (4.0)
4	250 ml NARROW	84.14 (3.312)	127 (5.0)
5	500 ml NARROW	69.85 (2.75)	171.45 (6.75)
6	1000 ml NARROW	88.9 (3.50)	203.2 (8.0)
7	2000 ml NARROW	120.65 (4.75)	241.3 (9.50)
8	4000 ml NARROW	152.4 (6.00)	285.75 (11.25)
9	125 ml WIDE	50.8 (2.00)	101.6 (4.0)
10	250 ml WIDE	84.137 (3.3125)	127 (5.0)
11	500 ml WIDE	69.85 (2.75)	171.45 (6.75)
12	1000 ml WIDE	88.9 (3.50)	203.2 (8.0)
13	2000 ml WIDE	120.65 (4.75)	241.3 (9.5)
14	4000 ml WIDE	152.4 (6.00)	285.75 (11.25)



5. IDENTIFY PART NUMBER
4. PACKAGE AND IDENTIFY PART NUMBER THEREON
3. SUGGESTED SUPPLIER: SCIENTIFIC PRODUCTS DIVISION
BAXTER DIAGNOSTICS INC. OR EQUIVALENT
2. SEE TABLE FOR DIMENSIONS
1. MATERIAL: NALGENE® HIGH-DENSITY POLYETHYLENE, OR EQUIVALENT
NARROW MOUTH DOT-2E BOTTLE (HDPE)
WIDE MOUTH BOTTLE (HDPE)

NOTES: UNLESS OTHERWISE SPECIFIED

 **Eckert & Ziegler**
ANALYTICS
ATLANTA, , GEORGIA 30318

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

DRAWN
WDJ

ME/CHECKER
◊

ENGINEER
◊

TITLE

PLASTIC BOTTLE

SERIES TITLE

SCALE
NONE

SIZE
A

CAGE CODE

DRAWING NO.

E-XXX-SAN

REV

SHEET
1 OF 2

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SOURCE MATRIX CONFIGURATION TABLE

DENSITY	DESCRIPTION	MATRIX
1.6 g/cc	SAND	ROLLO SILIA SAND, WASHED, DRIED SIZED ~ 40 MESH



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SIZE

DRAWN

CAGE CODE

-

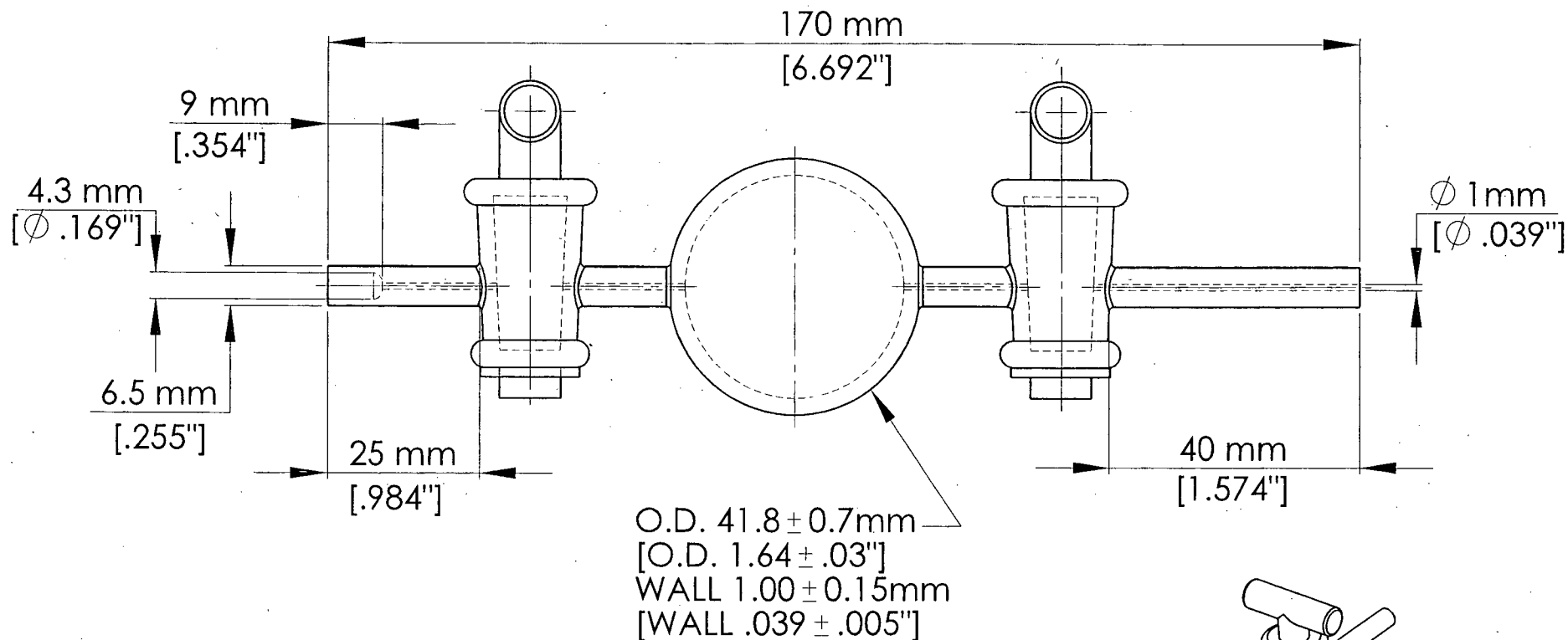
DRAWING NO.

E-XXX-SAN

REV

SHEET




2 OF 2

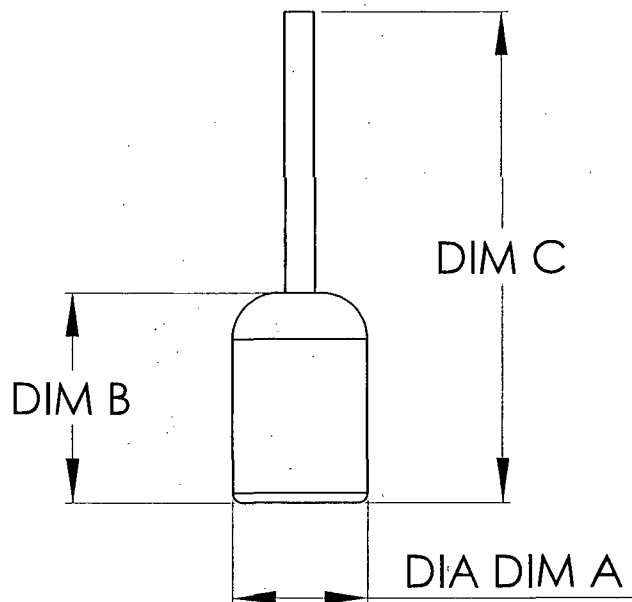
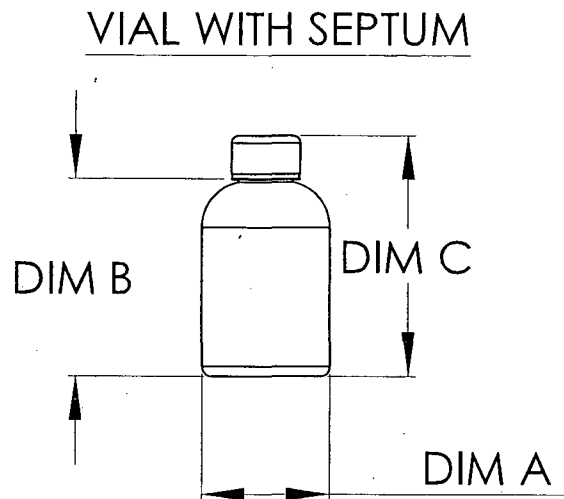


2. PACKAGE AND IDENTIFY PART NUMBER THEREON
1. MATERIAL: GLASS

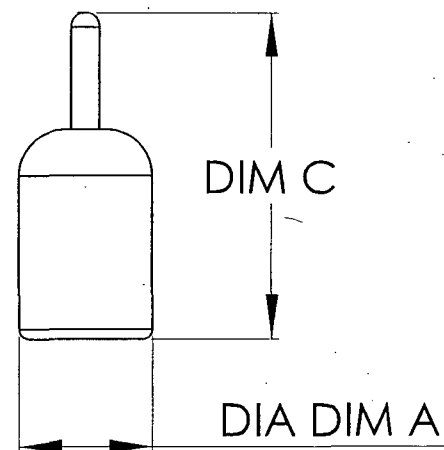
NOTES: UNLESS OTHERWISE SPECIFIED

P/N

<div></div> <div>Eckert & Ziegler</div> <div>ANALYTICS</div> <div>ATLANTA,, GEORGIA 30318</div>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE GLASS SPHERE				
	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 (J) N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER ◊		SERIES TITLE				
			ENGINEER ◊						
	THIRD ANGLE PROJECTION --  --  --		SCALE NONE	SIZE A	CAGE CODE 32993	DRAWING NO. E-XXX-SIM	REV	SHEET 1 OF 1	
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FLAME SEALED VIAL




BEFORE SEAL

AFTER SEAL

1. MATERIAL: GLASS

NOTES: UNLESS OTHERWISE SPECIFIED

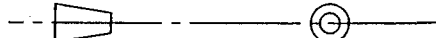
OFF- GAS VIAL						
NO	MODEL	DIM A (MM)	DIM B (MM)	DIM C (MM)	MATERIAL	MATRIX
1	15 ML W/SEPTUM	26.6 ± 0.5	40.4 ± 0.5	49.8 ± 2	GLASS	POLYSTYRENE BEADS DENSITY 0.02 g/cc
2	15 ML FLAME SEALED	28 ± 0.5	44 ± 1	68 ± 5	GLASS	AIR

 **Eckert & Ziegler**
ANALYTICS
ATLANTA, , GEORGIA 30318

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-
SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.

TOLERANCES (UNLESS OTHERWISE SPECIFIED)
X.XXX $\pm .002$ INCH ANGULAR TOLERANCE OF $0^\circ \pm 30'$
X.XX $\pm .005$ INCH FRACTIONAL DIMENSIONS $\pm 1/32"$
X.X $\pm .03$ INCH REFERENCE DIMENSIONS (I) N/A
X. $\pm .1$ INCH SURFACE ROUGHNESS μ INCH MAX
ALL DIMENSIONS ARE FINISHED DIMENSIONS

THIRD ANGLE PROJECTION



DRAWN
WDJ

ME/CHECKER
<>

ENGINEER
<>

SCALE
NONE

SIZE
A

TITLE
OFF GAS VIAL

SERIES TITLE

CAGE CODE

-

DRAWING NO.

E-XXX-SIM

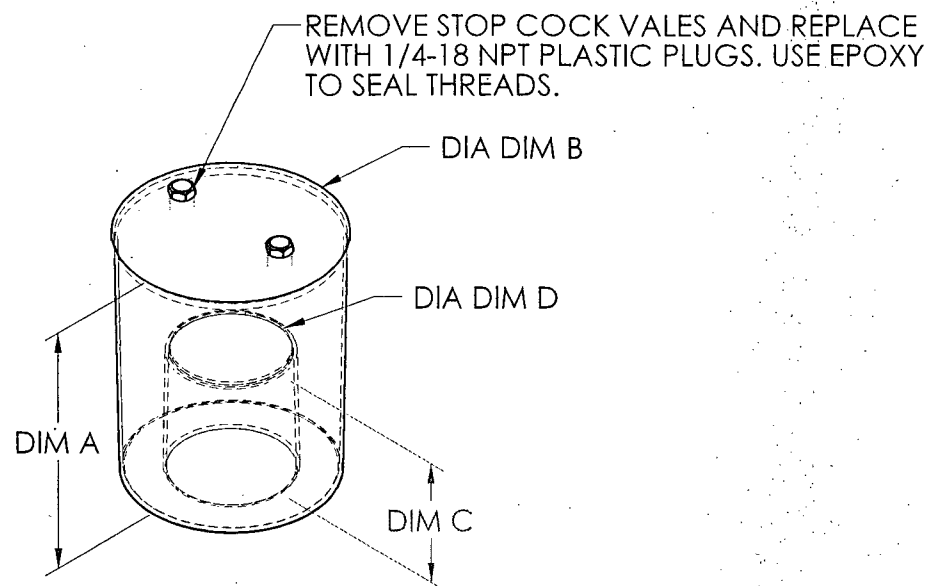
REV

-

SHEET

1 OF 1

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MARINELLI GAS BEAKER CONFIGURATION TABLE

DASH No. (X)	MODEL SIZE	DETECTOR "ENDCAP"	DIM A	DIM B (DIA)	DIM C	DIM D (DIA)
1	G-127G 1 LITER	Ø 2.75 [70]	6.1 [155]	Ø 5.2 [132]	3.1 [79]	Ø 2.82 [72]
2	G-130G 1 LITER	Ø 3.00 [76]	6.2 [157]	Ø 5.25 [133]	3.0 [76]	Ø 3.07 [78]
3	G-133N 1 LITER	Ø 3.25 [82]	6.1 [155]	Ø 5.2 [132]	3.01 [76]	Ø 3.37 [85]
4	G-430G 4 LITER	Ø 3.00 [76]	7.1 [180]	Ø 8.1 [206]	3.0 [76]	Ø 3.05 [77]
5	G-433N 4 LITER	Ø 3.25 [82]	7.1 [180]	Ø 8.1 [206]	3.02 [77]	Ø 3.35 [85]
6	G-438G 4 LITER	Ø 3.75 [96]	7.1 [180]	Ø 8.1 [206]	4.0 [101]	Ø 3.80 [96]
7	G-445N 4 LITER	Ø 4.40 [112]	7.1 [180]	Ø 8.1 [206]	4.23 [107]	Ø 4.50 [114]

3. PACKAGE AND IDENTIFY PART NUMBER THEREON
2. BEAKER AND CAP SUPPLIED AS A MATCHED SET.
1. MATERIAL: HIGH-IMPACT POLYSTYRENE, SEAMLESS THINWALL CONSTRUCTION OR EQUIVALENT (RECOMMENDED VENDOR GA-MA & ASSOCIATES, INC..)

NOTES: UNLESS OTHERWISE SPECIFIED



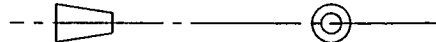
Eckert & Ziegler
Analytics

ATLANTA, GEORGIA 30318

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
WDJ

ME/CHECKER
-

ENGINEER
-

SCALE
NONE

SIZE
A

TITLE

GAS GAMMA STANDARD

SERIES TITLE

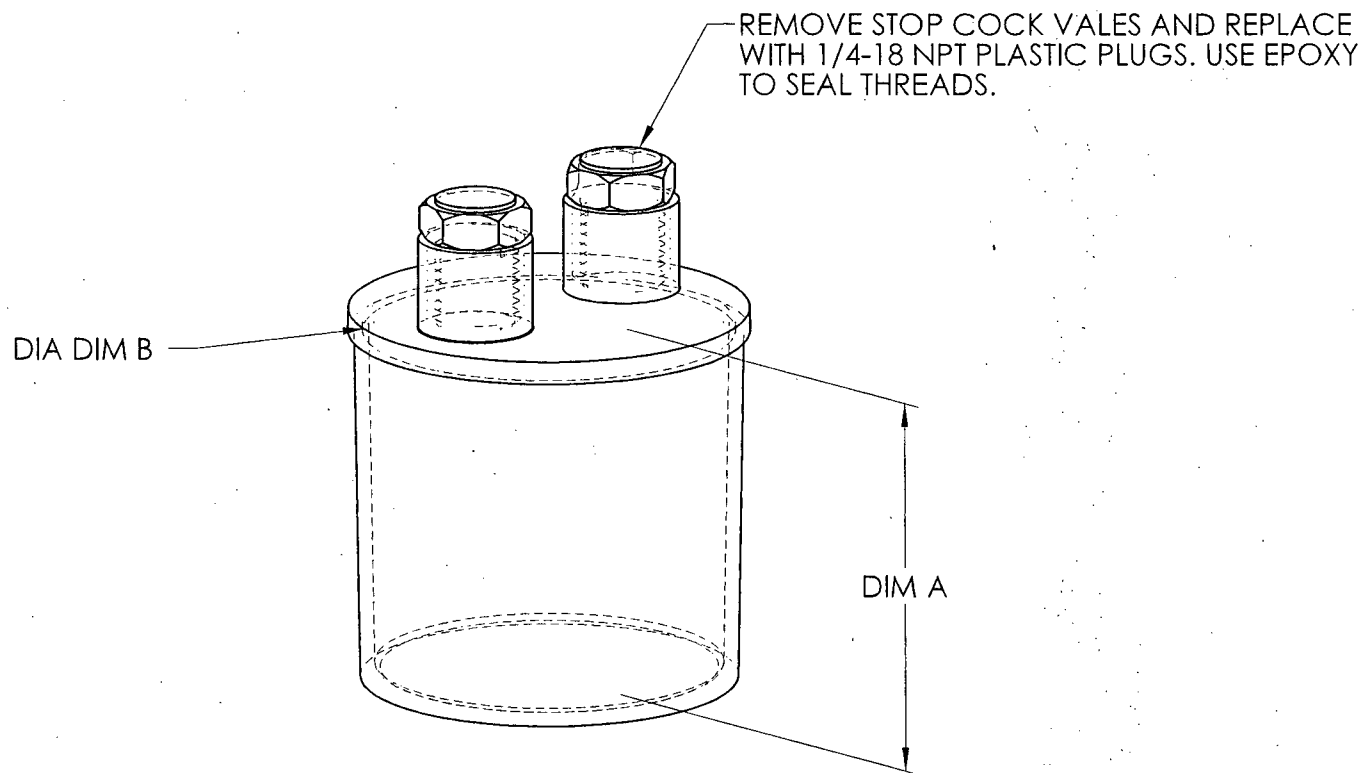
CAGE CODE
-

DRAWING NO.
E-XXX-SIM

REV
-

SHEET
1 OF 3


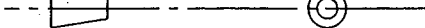
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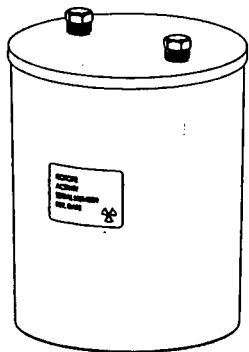


3. PACKAGE AND IDENTIFY PART NUMBER THEREON
 2. BEAKER AND CAP SUPPLIED AS A MATCHED SET.
 1. MATERIAL: HIGH-IMPACT POLYSTYRENE, SEAMLESS
 THINWALL CONSTRUCTION OR EQUIVALENT
 (RECOMMENDED VENDOR GA-MA & ASSOCIATES, INC.)
 NOTES: UNLESS OTHERWISE SPECIFIED

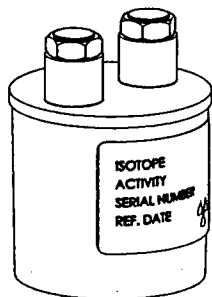
GAS BEAKER CONFIGURATION TABLE

DASH No. (X)	MODEL SIZE	DIM A	DIM B (DIA)
1	RG-100 (100 cc)	1.91 [48.5]	Ø 2.19 [55.6]
2	RG-25 (25 cc)	0.57 [14.5]	Ø 2.29 [58.2]

<div></div> <div>Eckert & Ziegler</div> <div>Analytics</div> <div>ATLANTA, GEORGIA 30318</div>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE GAS GAMMA STANDARD				
	TOLERANCES (UNLESS OTHERWISE SPECIFIED)		ME/CHECKER		SERIES TITLE				
	X.XXX ± .002 INCH ANGULAR TOLERANCE OF 0°±30'		-						
	X.XX ± .005 INCH FRACTIONAL DIMENSIONS ± 1/32"		ENGINEER						
X.X ± .03 INCH REFERENCE DIMENSIONS (I) N/A		-		CAGE CODE		DRAWING NO.	REV	SHEET	
X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX		ALL DIMENSIONS ARE FINISHED DIMENSIONS		SCALE NONE	SIZE A	-	E-XXX-SIM	-	2 OF 3
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MARINELLI GAS BEAKER			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1		MATRIX, DENSITY 0.02 g/cc POLYSTYRENE BEADS	1
-	-	-	1



GAS BEAKER			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1		MATRIX, DENSITY 0.02 g/cc POLYSTYRENE BEADS	1
-	-	-	1



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BILL OF MATERIAL

DRAWN
WDJ

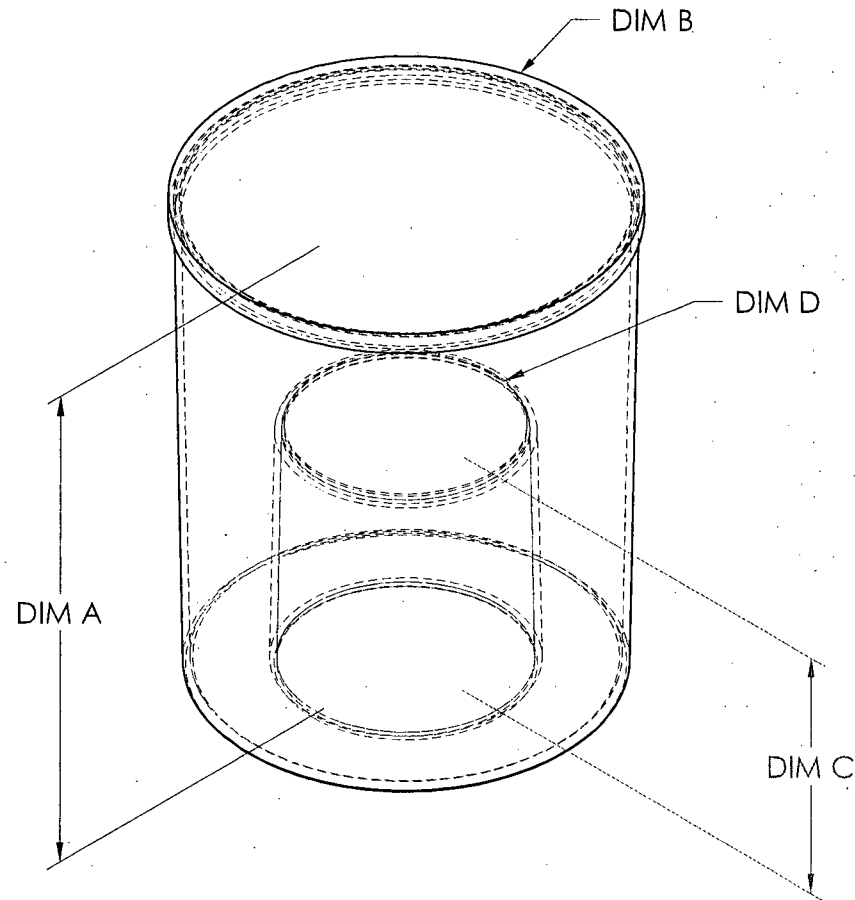
CAGE CODE
-

DRAWING NO.
E-XXX-SIM

REV
-

SHEET
3 OF 3



SEE MARINELLI BEAKER SIZE CONFIGURATION TABLE



3. PACKAGE AND IDENTIFY PART NUMBER THEREON
2. BEAKER AND CAP SUPPLIED AS A MATCHED SET.
1. MATERIAL: CONTAINER- POLYPROPYLENE, CAP- POLYETHYLENE
(RECOMMENDED VENDOR GA-MA & ASSOCIATES. INC..)

NOTES: UNLESS OTHERWISE SPECIFIED

MARINELLI BEAKER

 Eckert & Ziegler Analytics ATLANTA, GEORGIA 30318	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.	DRAWN WDJ	TITLE MARINELLI BEAKER GAMMA SOURCE					
	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	ME/CHECKER -	SERIES TITLE					
	THIRD ANGLE PROJECTION 	ENGINEER -	SCALE NONE	SIZE A	CAGE CODE -	DRAWING NO. E-XXX-SVE	REV -	SHEET 1 OF 3
	THIS DRAWING IS THE PROPERTY OF ECKERT & ZIEGLER ANALYTICS AND MAY NOT BE USED, REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS WITHOUT EXPRESS AUTHORIZATION BY ECKERT & ZIEGLER ANALYTICS.							

MARINELLI BEAKER SIZE CONFIGURATION TABLE

	MODEL	DETECTOR "ENDCAP" DIA mm (IN)	DIM A mm (IN)	DIM B mm (IN)	DIM C mm (IN)	DIM D mm (IN)	FREEBOARD VOLUME (L)
1	443016 250 mL	Ø 76 (3.00)	65 (2.6)	Ø 116 (4.6)	38 (1.5)	Ø 78 (3.1)	0.235
2	523N-E 500 mL	Ø 57 (2.25)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 58 (2.30)	---
3	527G-E 500 mL	Ø 70 (2.75)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 71 (2.80)	0.50
4	530G-E 500 mL	Ø 76 (3.00)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 77 (3.03)	0.40
5	533N 500 mL	Ø 82 (3.25)	117 (4.6)	Ø 127 (5.0)	75 (2.9)	Ø 84 (3.30)	0.54
6	125G 1 LITER	Ø 65 (2.56)	152 (6.0)	Ø 127 (5.0)	76 (3.0)	Ø 65 (2.55)	1.02
7	127G 1 LITER	Ø 70 (2.75)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 71 (2.78)	0.97
8	130G 1 LITER	Ø 76 (3.00)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 76 (3.05)	0.95
9	133N 1 LITER	Ø 82 (3.25)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 84 (3.33)	0.85
10	138G 1 LITER	Ø 95 (3.75)	165 (6.5)	Ø 157 (6.2)	101 (4.0)	Ø 96 (3.78)	1.60
11	227G 2 LITER	Ø 70 (2.75)	165 (6.5)	Ø 157 (6.2)	76 (3.0)	Ø 71 (2.78)	1.80
12	230G 2 LITER	Ø 76 (3.00)	165 (6.5)	Ø 157 (6.2)	76 (3.0)	Ø 79 (3.12)	1.74
13	233N 2 LITER	Ø 82 (3.25)	165 (6.5)	Ø 150 (6.1)	76 (3.0)	Ø 84 (3.30)	1.68
14	430G 4 LITER	Ø 76 (3.00)	178 (7.0)	Ø 200 (7.9)	76 (3.0)	Ø 77 (3.05)	3.76
15	433N 4 LITER	Ø 82 (3.25)	178 (7.0)	Ø 196 (7.7)	76 (3.0)	Ø 84 (3.33)	3.69
16	438G 4 LITER	Ø 95 (3.75)	178 (7.0)	Ø 200 (7.9)	101 (4.0)	Ø 96 (3.78)	3.36
17	445N 4 LITER	Ø 112 (4.40)	175 (6.9)	Ø 200 (7.9)	104 (4.1)	Ø 113 (4.44)	3.06
18	132G 1 LITER	Ø 83 (3.25)	130 (5.1)	Ø 170 (6.7)	71 (2.8)	Ø 84 (3.32)	1.10
19	141G 1 LITER	Ø 102 (4.00)	165 (6.5)	Ø 157 (6.2)	102 (4.0)	Ø 103 (4.08)	1.46
20	190G 1 LITER	Ø 90 (3.54)	130 (5.1)	Ø 170 (6.7)	102 (4.0)	Ø 91 (3.58)	1.00
21	441G 4 LITER	Ø 102 (4.00)	178 (7.0)	Ø 201 (7.9)	102 (4.0)	Ø 103 (4.07)	3.28
22	448G 4 LITER	Ø 121 (4.75)	178 (7.0)	Ø 201 (7.9)	107 (4.2)	Ø 121 (4.79)	2.88
23	538G 500 mL	Ø 95 (3.75)	127 (5.0)	Ø 140 (5.5)	84 (3.3)	Ø 96 (3.78)	0.79
24	580G 500 mL	Ø 80 (3.15)	117 (4.6)	Ø 130 (5.1)	71 (2.8)	Ø 81 (3.19)	0.58
25	590G 500 mL	Ø 90 (3.54)	117 (4.6)	Ø 130 (5.1)	76 (3.0)	Ø 91 (3.60)	0.44
26	541G 500 mL	Ø 102 (4.00)	117 (4.6)	Ø 130 (5.1)	84 (3.3)	Ø 102 (4.03)	0.48
27	463316 250 mL	Ø 83 (3.25)	66 (2.6)	Ø 118 (4.63)	38 (1.5)	Ø 85 (3.33)	0.222



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SIZE

DRAWN
WDJ

CAGE CODE
-

DRAWING NO.
E-XXX-SVE

REV
-

SHEET
2 OF 3

SOURCE MATRIX CONFIGURATION TABLE

DENSITY	DESCRIPTION	MATRIX
0.44 g/cc	CORN COBB GRIT	CORN COBB GRIT
0.6 G/cc	COFFEE GROUNDS	GROUND COFFEE BEANS



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BILL OF MATERIA

DRAWN
WDJ

CAGE CODE
-

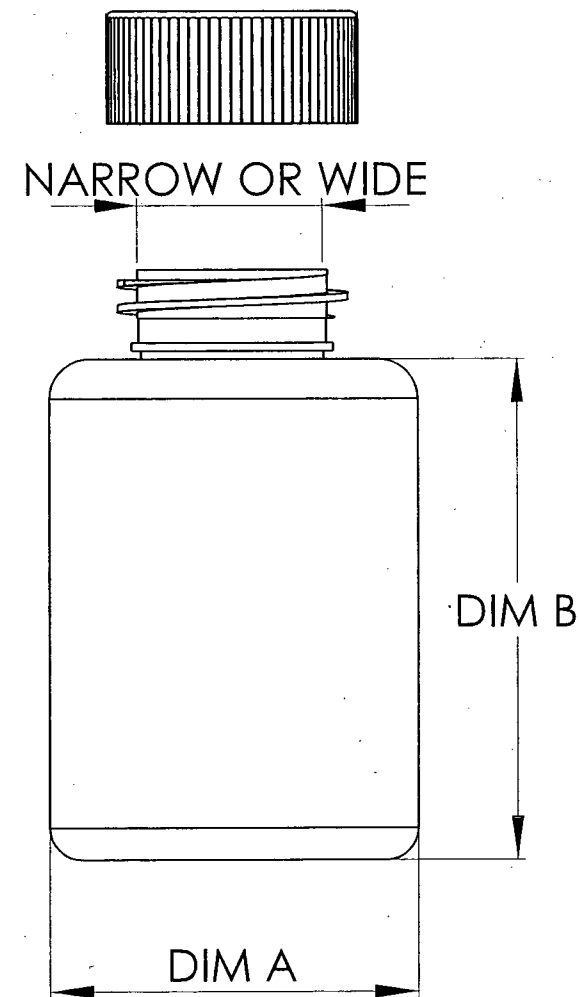
DRAWING NO.
E-XXX-SVE

REV
-

SHEET
3 OF 3


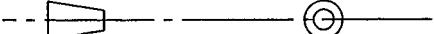
BOTTLES LEGEND

DASH NO.	MOUTH SIZE	A-DIA MM/INCH	B-SIZE MM/INCH
1	30ml NARROW	34.9 (1.375)	63.5 (2.50)
2	60 ml NARROW	38.1 (1.5)	82.55 (3.25)
3	125 ml NARROW	50.8 (2.0)	101.6 (4.0)
4	250 ml NARROW	84.14 (3.312)	127 (5.0)
5	500 ml NARROW	69.85 (2.75)	171.45 (6.75)
6	1000 ml NARROW	88.9 (3.50)	203.2 (8.0)
7	2000 ml NARROW	120.65 (4.75)	241.3 (9.50)
8	4000 ml NARROW	152.4 (6.00)	285.75 (11.25)
9	125 ml WIDE	50.8 (2.00)	101.6 (4.0)
10	250 ml WIDE	84.137 (3.3125)	127 (5.0)
11	500 ml WIDE	69.85 (2.75)	171.45 (6.75)
12	1000 ml WIDE	88.9 (3.50)	203.2 (8.0)
13	2000 ml WIDE	120.65 (4.75)	241.3 (9.5)
14	4000 ml WIDE	152.4 (6.00)	285.75 (11.25)



5. IDENTIFY PART NUMBER
4. PACKAGE AND IDENTIFY PART NUMBER THEREON
3. SUGGESTED SUPPLIER: SCIENTIFIC PRODUCTS DIVISION
BAXTER DIAGNOSTICS INC. OR EQUIVALENT
2. SEE TABLE FOR DIMENSIONS
1. MATERIAL: NALGENE® HIGH-DENSITY POLYETHYLENE, OR EQUIVALENT
NARROW MOUTH DOT-2E BOTTLE (HDPE)
WIDE MOUTH BOTTLE (HDPE)

NOTES: UNLESS OTHERWISE SPECIFIED

 Eckert & Ziegler ANALYTICS ATLANTA, GEORGIA 30318	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE PLASTIC BOTTLE				
	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 (J) N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER <>		SERIES TITLE				
			ENGINEER <>						
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SOURCE MATRIX CONFIGURATION TABLE

DENSITY	DESCRIPTION	MATRIX
0.44 g/cc	CORN COBB GRIT	CORN COBB GRIT
0.6 g/cc	COFFEE GROUNDS	COFFEE GROUNDS



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SIZE

DRAWN

CAGE CODE

-

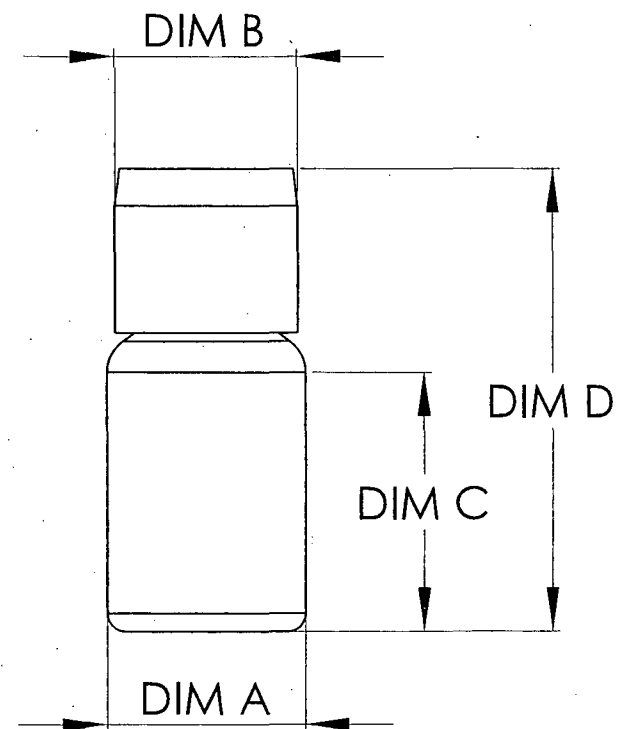
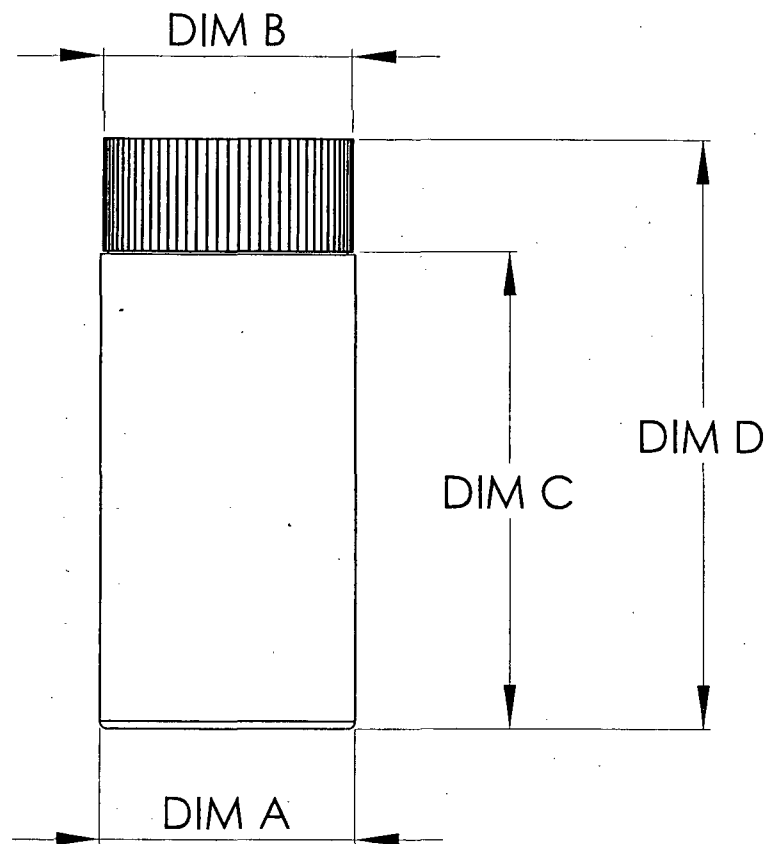
DRAWING NO.

E-XXX-SVE

REV

SHEET

2 OF 2



FLAME SEALED

3. PACKAGE AND IDENTIFY PART NUMBER THEREON
2. SURFACE ROUGHNESS: 32 MICRON INCH
1. MATERIAL:

NOTES: UNLESS OTHERWISE SPECIFIED

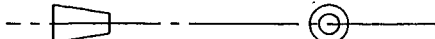
LIQUID SCINTILLATION VIAL						
NO	MODEL	DIM A [MM]	DIM B [MM]	DIM C [MM]	DIM D [MM]	MATERIAL
1	20 ml	26.5	26.0	48.0	60.6	PLASTIC
2	20 ml	27.3	24.9	44.4	61	GLASS
3	7 ml	16.5	18.5	42.8	52.7	PLASTIC
4	7 ml	16.7	15.2	44.4	57.8	GLASS
5	20ml fsv	27.5	25.4	37.1	63	GLASS FLAME SEAL

 **Eckert & Ziegler**
ANALYTICS
ATLANTA, GEORGIA 30318

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 (J) N/A
 X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX
 ALL DIMENSIONS ARE FINISHED DIMENSIONS

THIRD ANGLE PROJECTION



DRAWN
WDJ

ME/CHECKER
<>

ENGINEER
<>

SCALE
NONE

SIZE
A

TITLE

LSV SOURCE ASSEMBLY

SERIES TITLE

CAGE CODE
-

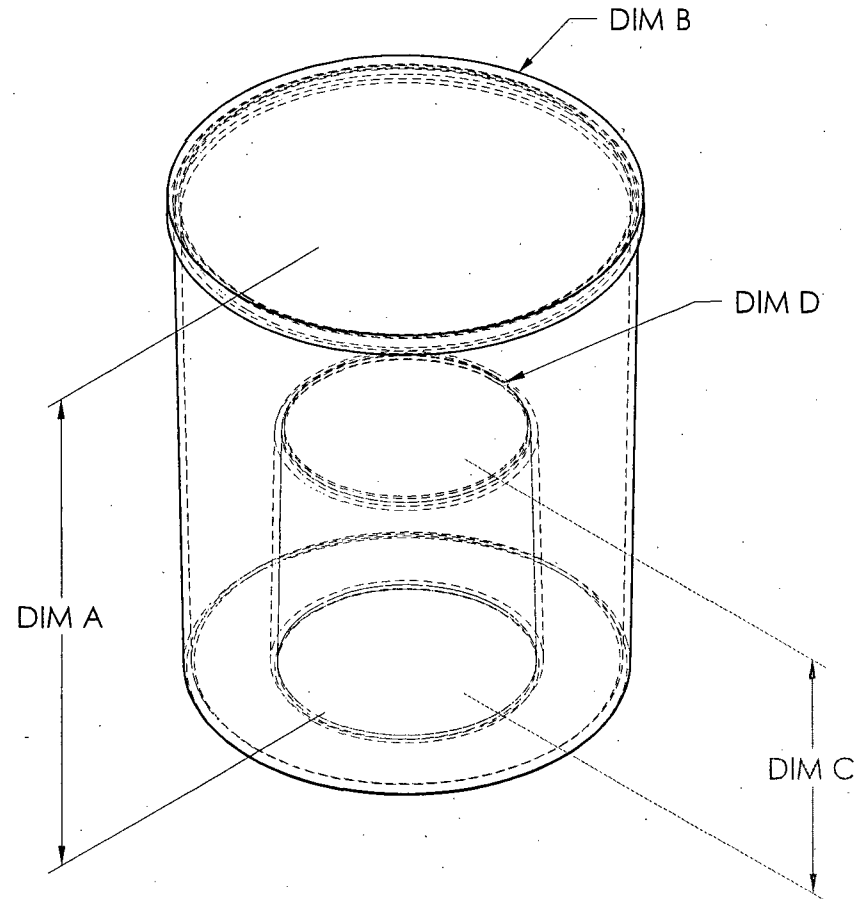
DRAWING NO.
E-XXX-SOL

REV

SHEET
1 OF 1

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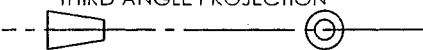
SEE MARINELLI BEAKER SIZE CONFIGURATION TABLE



3. PACKAGE AND IDENTIFY PART NUMBER THEREON
2. BEAKER AND CAP SUPPLIED AS A MATCHED SET.
1. MATERIAL: CONTAINER- POLYPROPYLENE, CAP- POLYETHYLENE
(RECOMMENDED VENDOR GA-MA & ASSOCIATES. INC..)

NOTES: UNLESS OTHERWISE SPECIFIED

MARINELLI BEAKER

 Eckert & Ziegler Analytics ATLANTA, GEORGIA 30318 <small>THIS DRAWING IS THE PROPERTY OF ECKERT & ZIEGLER ANALYTICS AND MAY NOT BE USED, REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS WITHOUT EXPRESS AUTHORIZATION BY ECKERT & ZIEGLER ANALYTICS.</small>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS (mm) ARE IN MILLIMETERS.	DRAWN WDJ	TITLE MARINELLI BEAKER GAMMA SOURCE				
	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	ME/CHECKER -					SERIES TITLE
ENGINEER -	THIRD ANGLE PROJECTION 	SCALE NONE	SIZE A	CAGE CODE -	DRAWING NO. E-XXX-SOL	REV -	SHEET 1 OF 3

MARINELLI BEAKER SIZE CONFIGURATION TABLE

	MODEL	DETECTOR "ENDCAP" DIA mm (IN)	DIM A mm (IN)	DIM B mm (IN)	DIM C mm (IN)	DIM D mm (IN)	FREEBOARD VOLUME (L)
1	443016 250 mL	Ø 76 (3.00)	65 (2.6)	Ø 116 (4.6)	38 (1.5)	Ø 78 (3.1)	0.235
2	523N-E 500 mL	Ø 57 (2.25)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 58 (2.30)	---
3	527G-E 500 mL	Ø 70 (2.75)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 71 (2.80)	0.50
4	530G-E 500 mL	Ø 76 (3.00)	101 (4.0)	Ø 114 (4.5)	68 (2.7)	Ø 77 (3.03)	0.40
5	533N 500 mL	Ø 82 (3.25)	117 (4.6)	Ø 127 (5.0)	75 (2.9)	Ø 84 (3.30)	0.54
6	125G 1 LITER	Ø 65 (2.56)	152 (6.0)	Ø 127 (5.0)	76 (3.0)	Ø 65 (2.55)	1.02
7	127G 1 LITER	Ø 70 (2.75)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 71 (2.78)	0.97
8	130G 1 LITER	Ø 76 (3.00)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 76 (3.05)	0.95
9	133N 1 LITER	Ø 82 (3.25)	152 (6.0)	Ø 129 (5.1)	76 (3.0)	Ø 84 (3.33)	0.85
10	138G 1 LITER	Ø 95 (3.75)	165 (6.5)	Ø 157 (6.2)	101 (4.0)	Ø 96 (3.78)	1.60
11	227G 2 LITER	Ø 70 (2.75)	165 (6.5)	Ø 157 (6.2)	76 (3.0)	Ø 71 (2.78)	1.80
12	230G 2 LITER	Ø 76 (3.00)	165 (6.5)	Ø 157 (6.2)	76 (3.0)	Ø 79 (3.12)	1.74
13	233N 2 LITER	Ø 82 (3.25)	165 (6.5)	Ø 150 (6.1)	76 (3.0)	Ø 84 (3.30)	1.68
14	430G 4 LITER	Ø 76 (3.00)	178 (7.0)	Ø 200 (7.9)	76 (3.0)	Ø 77 (3.05)	3.76
15	433N 4 LITER	Ø 82 (3.25)	178 (7.0)	Ø 196 (7.7)	76 (3.0)	Ø 84 (3.33)	3.69
16	438G 4 LITER	Ø 95 (3.75)	178 (7.0)	Ø 200 (7.9)	101 (4.0)	Ø 96 (3.78)	3.36
17	445N 4 LITER	Ø 112 (4.40)	175 (6.9)	Ø 200 (7.9)	104 (4.1)	Ø 113 (4.44)	3.06
18	132G 1 LITER	Ø 83 (3.25)	130 (5.1)	Ø 170 (6.7)	71 (2.8)	Ø 84 (3.32)	1.10
19	141G 1 LITER	Ø 102 (4.00)	165 (6.5)	Ø 157 (6.2)	102 (4.0)	Ø 103 (4.08)	1.46
20	190G 1 LITER	Ø 90 (3.54)	130 (5.1)	Ø 170 (6.7)	102 (4.0)	Ø 91 (3.58)	1.00
21	441G 4 LITER	Ø 102 (4.00)	178 (7.0)	Ø 201 (7.9)	102 (4.0)	Ø 103 (4.07)	3.28
22	448G 4 LITER	Ø 121 (4.75)	178 (7.0)	Ø 201 (7.9)	107 (4.2)	Ø 121 (4.79)	2.88
23	538G 500 mL	Ø 95 (3.75)	127 (5.0)	Ø 140 (5.5)	84 (3.3)	Ø 96 (3.78)	0.79
24	580G 500 mL	Ø 80 (3.15)	117 (4.6)	Ø 130 (5.1)	71 (2.8)	Ø 81 (3.19)	0.58
25	590G 500 mL	Ø 90 (3.54)	117 (4.6)	Ø 130 (5.1)	76 (3.0)	Ø 91 (3.60)	0.44
26	541G 500 mL	Ø 102 (4.00)	117 (4.6)	Ø 130 (5.1)	84 (3.3)	Ø 102 (4.03)	0.48
27	463316 250 mL	Ø 83 (3.25)	66 (2.6)	Ø 118 (4.63)	38 (1.5)	Ø 85 (3.33)	0.222



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SIZE

DRAWN
WDJ

CAGE CODE
-

DRAWING NO.
E-XXX-SOL

REV
-

SHEET
2 OF 3

SOURCE MATRIX CONFIGURATION TABLE

DENSITY	DESCRIPTION	MATRIX
1.15 g/cc	REGULAR RESIN	RESIN, MR-11109. CATALYST METHYL ETHYL KETONE PEROXIDE, MA
1.2 - 2.0 g/cc	RESIN MIX WITH MARBLE	MARBLEND MARBLE POWDER AND RESIN



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BILL OF MATERIAL

DRAWN
WDJ

CAGE CODE
-

DRAWING NO.
E-XXX-SOL

REV
-

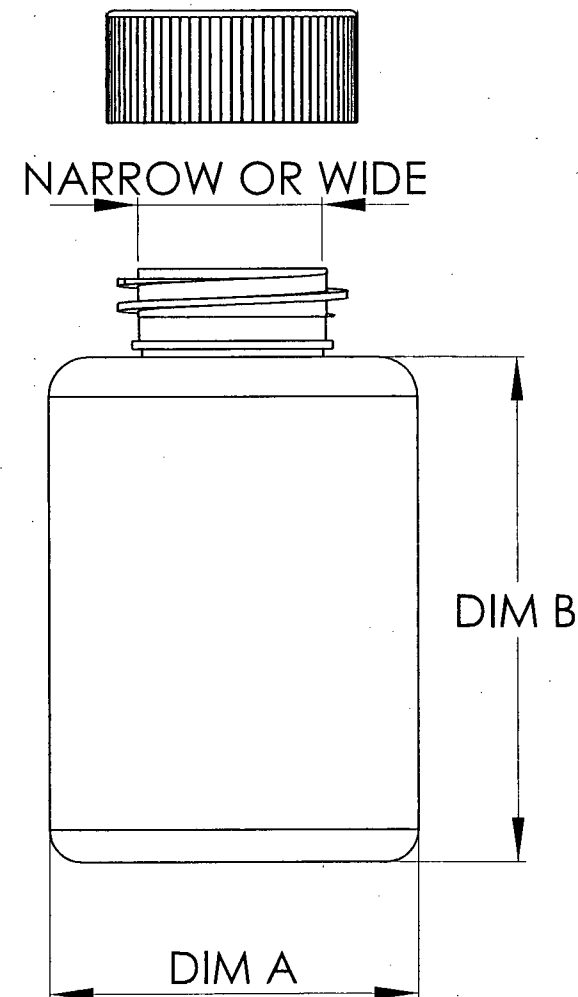
SHEET
3 OF 3


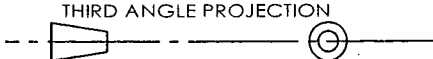
BOTTLES LEGEND

DASH NO.	MOUTH SIZE	A-DIA MM/INCH	B-SIZE MM/INCH
1	30ml NARROW	34.9 (1.375)	63.5 (2.50)
2	60 ml NARROW	38.1 (1.5)	82.55 (3.25)
3	125 ml NARROW	50.8 (2.0)	101.6 (4.0)
4	250 ml NARROW	84.14 (3.312)	127 (5.0)
5	500 ml NARROW	69.85 (2.75)	171.45 (6.75)
6	1000 ml NARROW	88.9 (3.50)	203.2 (8.0)
7	2000 ml NARROW	120.65 (4.75)	241.3 (9.50)
8	4000 ml NARROW	152.4 (6.00)	285.75 (11.25)
9	125 ml WIDE	50.8 (2.00)	101.6 (4.0)
10	250 ml WIDE	84.137 (3.3125)	127 (5.0)
11	500 ml WIDE	69.85 (2.75)	171.45 (6.75)
12	1000 ml WIDE	88.9 (3.50)	203.2 (8.0)
13	2000 ml WIDE	120.65 (4.75)	241.3 (9.5)
14	4000 ml WIDE	152.4 (6.00)	285.75 (11.25)

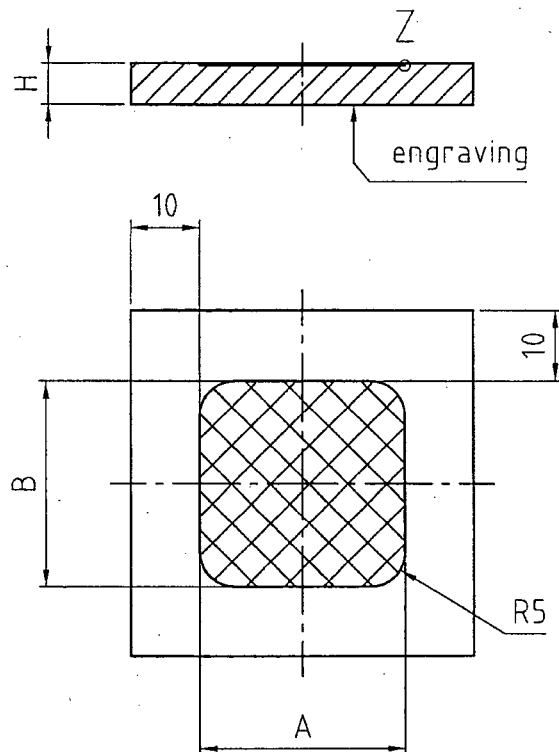
5. IDENTIFY PART NUMBER
4. PACKAGE AND IDENTIFY PART NUMBER THEREON
3. SUGGESTED SUPPLIER: SCIENTIFIC PRODUCTS DIVISION
BAXTER DIAGNOSTICS INC. OR EQUIVALENT
2. SEE TABLE FOR DIMENSIONS
1. MATERIAL: NALGENE® HIGH-DENSITY POLYETHYLENE, OR EQUIVALENT
NARROW MOUTH DOT-2E BOTTLE (HDPE)
WIDE MOUTH BOTTLE (HDPE)

NOTES: UNLESS OTHERWISE SPECIFIED



 Eckert & Ziegler ANALYTICS ATLANTA, , GEORGIA 30318	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN WDJ		TITLE PLASTIC BOTTLE				
	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 (J) N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER <>		SERIES TITLE				
	THIRD ANGLE PROJECTION 		ENGINEER <>		SCALE	SIZE	CAGE CODE	DRAWING NO.	REV
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SOURCE MATRIX CONFIGURATION TABLE		
DENSITY	DESCRIPTION	MATRIX
1.15 g/c	REGULAR RESIN	RESIN, MR-11109 CATALYST METHYL ETHYL KEYTONE
1.2-2.0 g/cc	RESIN MIX WITH MA	MARBLEND MARBLE POWDER



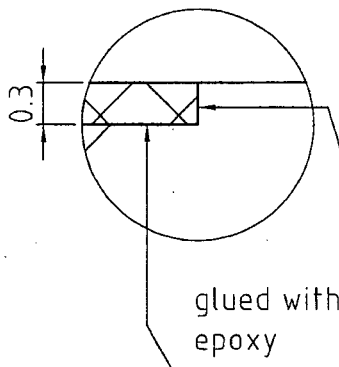
H= 3mm

A= 20-150mm
B= 20-150mm

max. H= 6mm

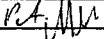
A= 20-300mm
B= 20-200mm

Z 20:1



anodized aluminium foil
thickness of the activated
anodized layer approx. 5µm

glued with
epoxy

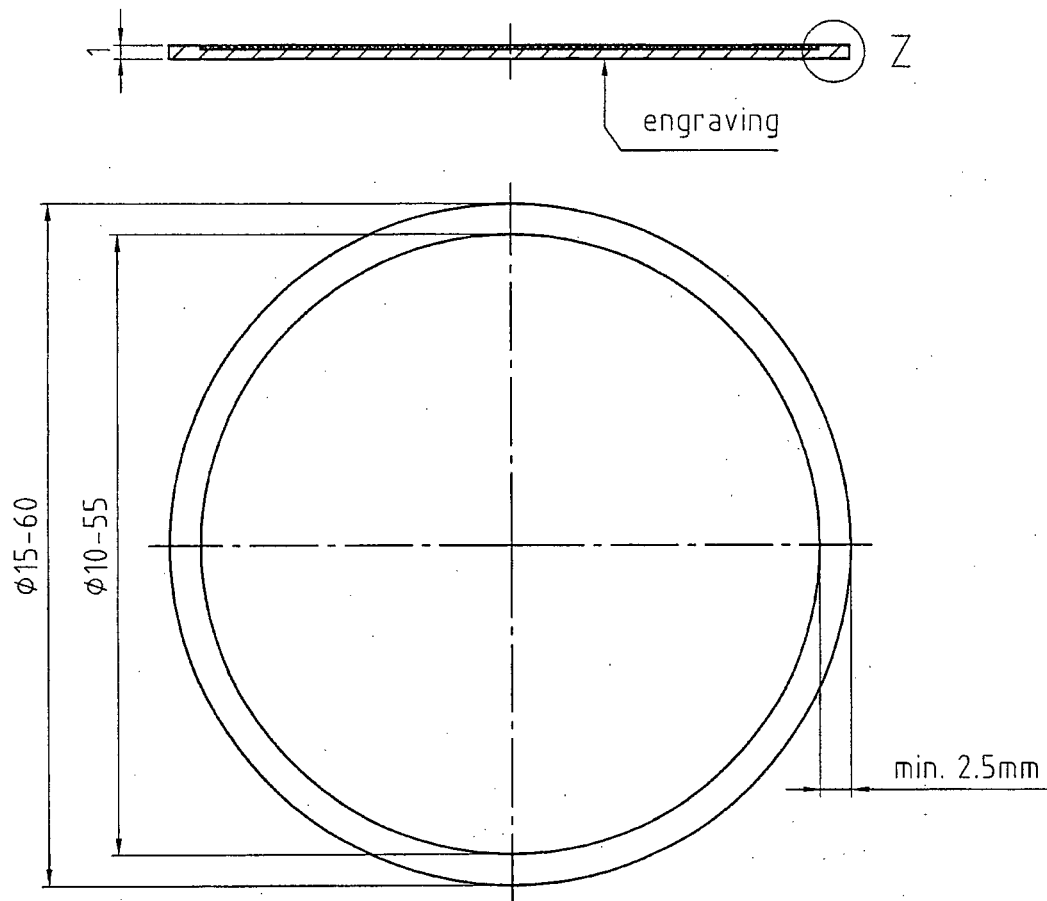
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								aluminium	
					Date	Name		WIDE-AREA REFERENCE SOURCE	
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				Appr.		RT 			
G	firm logo	18.06.2009	DST						
F	dimension	11.02.2009	ThD					VZ-1214-001	
E	firm logo	27.11.2008	DST						
D	dimension	16.04.2007	DST						
A	dimension	09.09.99	Bu.						
Issue Change				Date	Name	EDV No. \Zeichnungen\1001-1250\VerkaufsZeichnung\VZ1214\VZ1214H.dwg		Page 1	
								1 pag.	



Eckert & Ziegler
Nuclitec

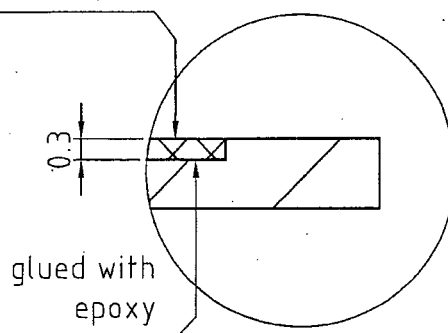
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1
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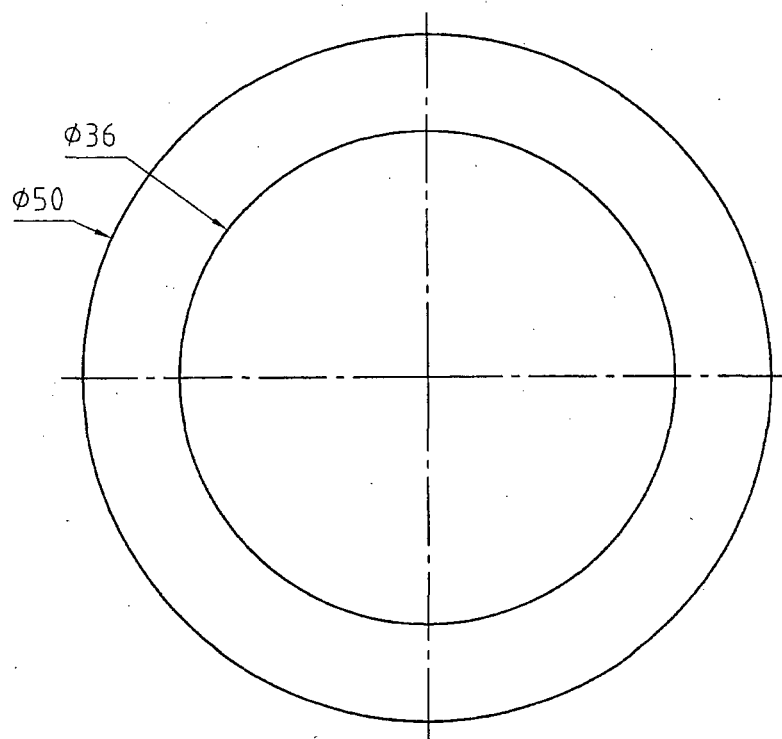
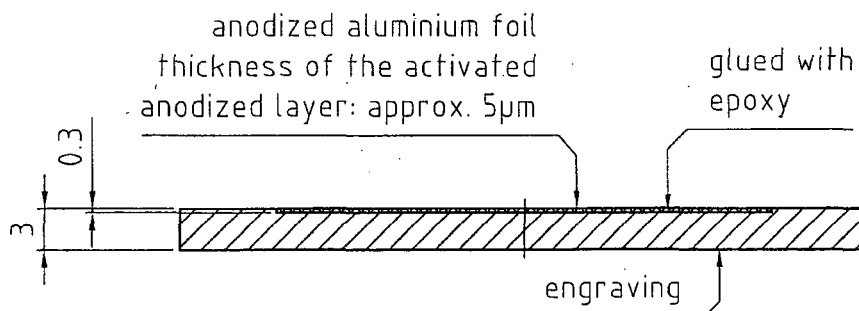
anodized aluminium foil
thickness of the activated
anodized layer: approx. 5µm


Z 10:1



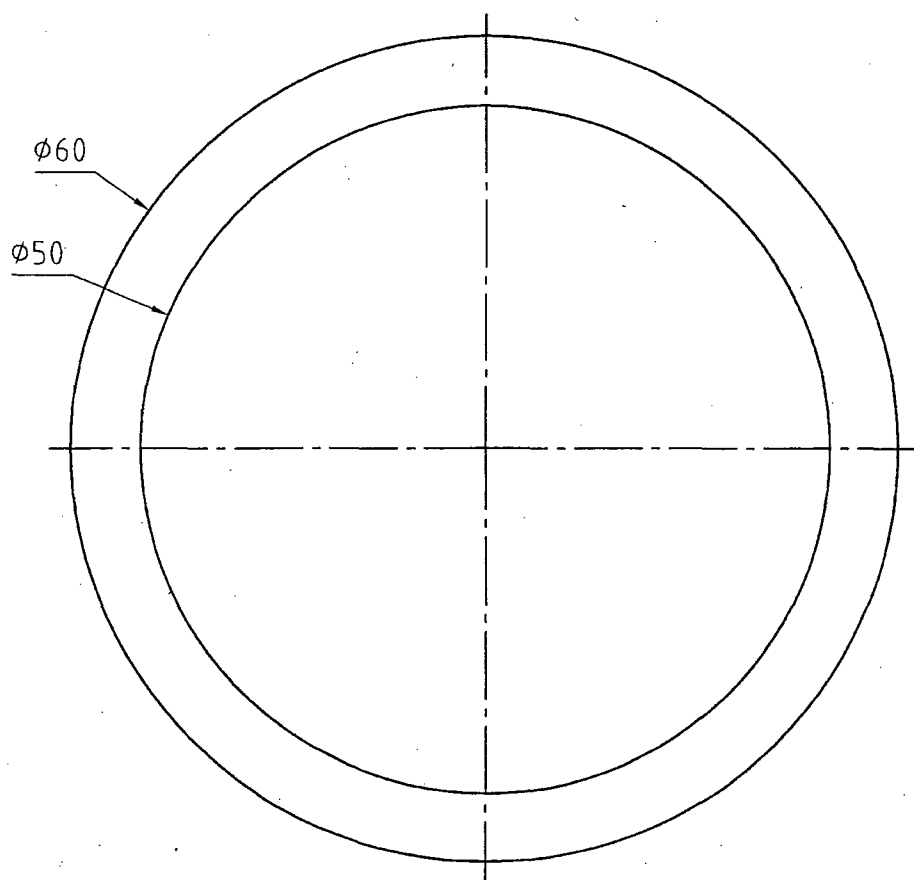
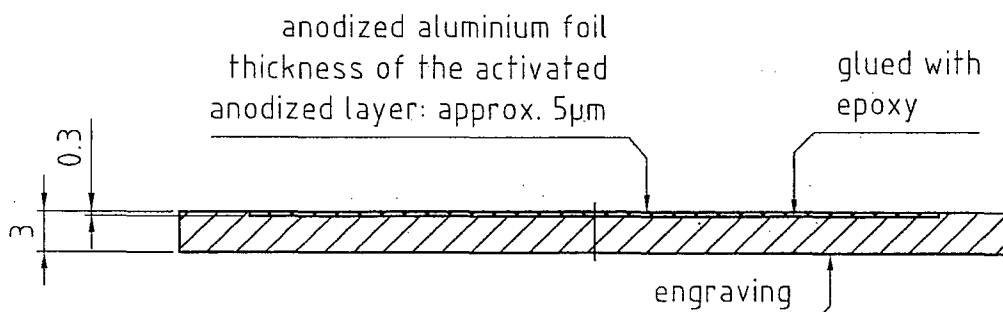
various nuclides				DIN ISO 2768 X m X		Surface		Scale 2:1		stainless steel	
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				Appr.							
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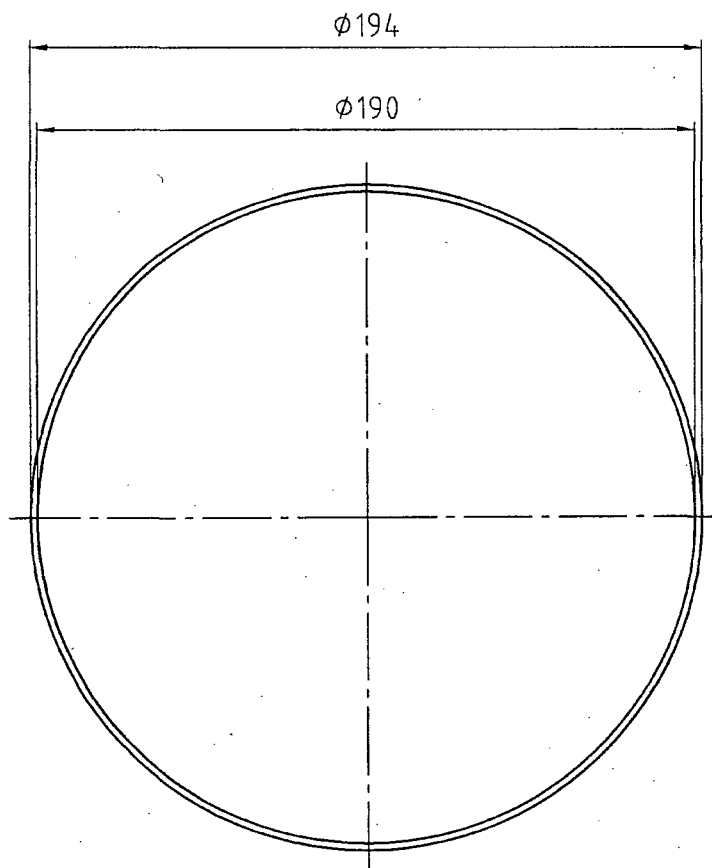
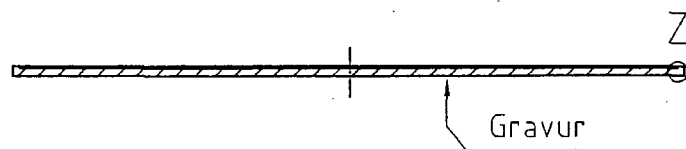
various nuclides				DIN ISO 2768 X m X		Surface		Scale 2:1	
								aluminium	
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E	firm logo	02.12.2008	DST						
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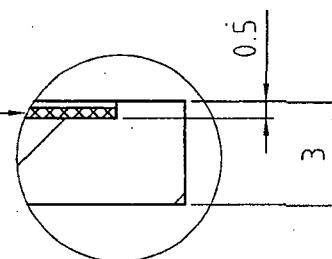
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				Appr.	<i>Rt Mln</i>				
				 Eckert & Ziegler		VZ-1370-001			Page 1
B	firm logo	17.06.2009	DST	Nuclitec					1 pag
E	firm logo	02.12.2008	DST						
Issue	Change	Date	Name	EDV No.	public\exchange\Zeichnungen\1251-1500\VerkaufsZeichnung\VZ1370C.dwg				


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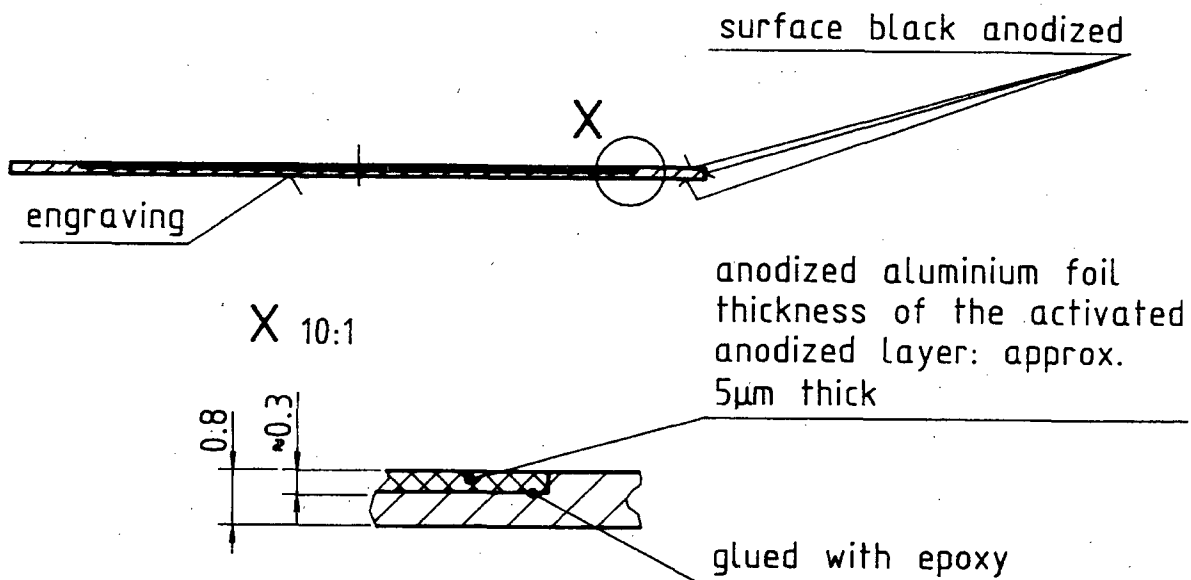
Z 5:1

aktivierte eloxierte 0.3mm
dicke Aluminiumfolie mit
Epoxidharz eingeklebt



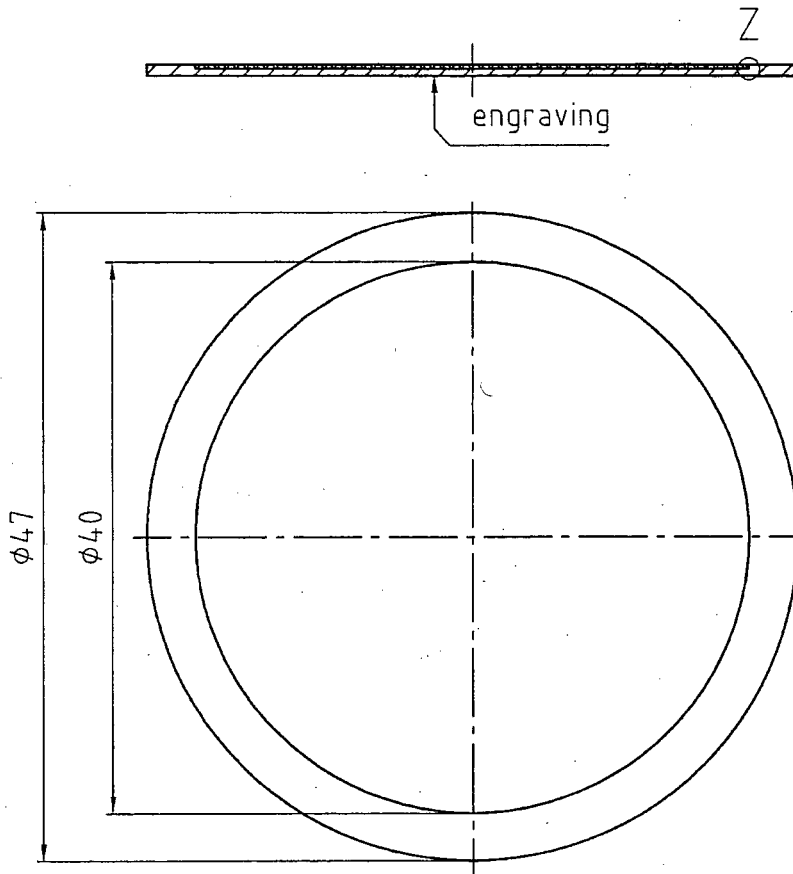
verschiedene Nuklide				DIN ISO 2768 fein mittel grob		Oberfläche		Maßstab 1:2		
								Aluminium		
					Datum	Name		ALPHA-BETA REFERENZSTRAHLER		
				Bearb.	17.06.2009	DStapper				
				Gepr.		<i>RT Müller</i>				
A	Firmenlogo	17.06.2009	DST	 Eckert & Ziegler		VZ-615-001			Blatt 1	
	Firmenlogo	23.01.2009	ThD	Nuclitec					1 B	
Zust.	Änderung	Datum	Name	EDV Nr. exchange\Zeichnungen\0501-0750\VerkaufsZeichnung\VZ615B.dwg						

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Tolerances DIN 7168 Medium in mm										Surface Texture DIN- ISO - 1302 (R_a in µm)										Scale: 2:1 (10:1)			
±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0	✓	N 12	N 11	N 10	N 9	N 8	N 7	N 6	N 5	N 4	N 3	N 2	N 1	Material: aluminium	
up to 6	30	100	300	1000	2000	4000	8000	★	50	25	12,5	6,3	3,2	1,6	0,8	0,4	0,2	0,1	0,05	0,025			
6	30	100	300	1000	2000	4000	8000	12000	Date		Name		ALPHA-BETA- REFERENCE SOURCE										
Drawn		29.4.94		Bu.																			
Approved				Pet. Mh.																			
various nuclides																							
Amersham Buchler GmbH & Co KG W-3300 Braunschweig										Drawing Number VZ-1688													
Issue	Change	Date	Name	Amersham																			

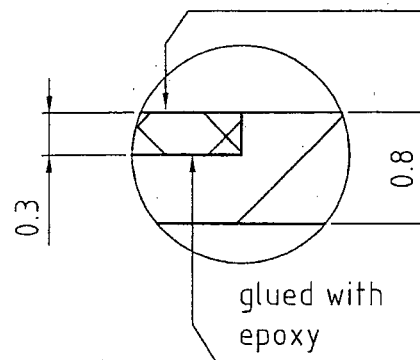
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



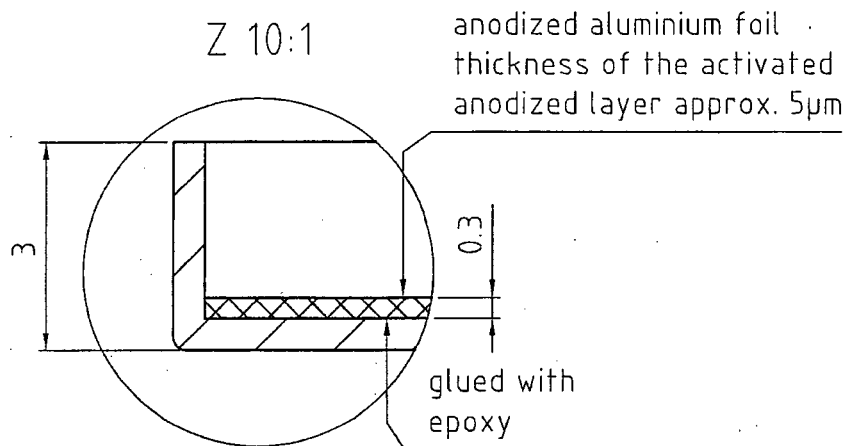
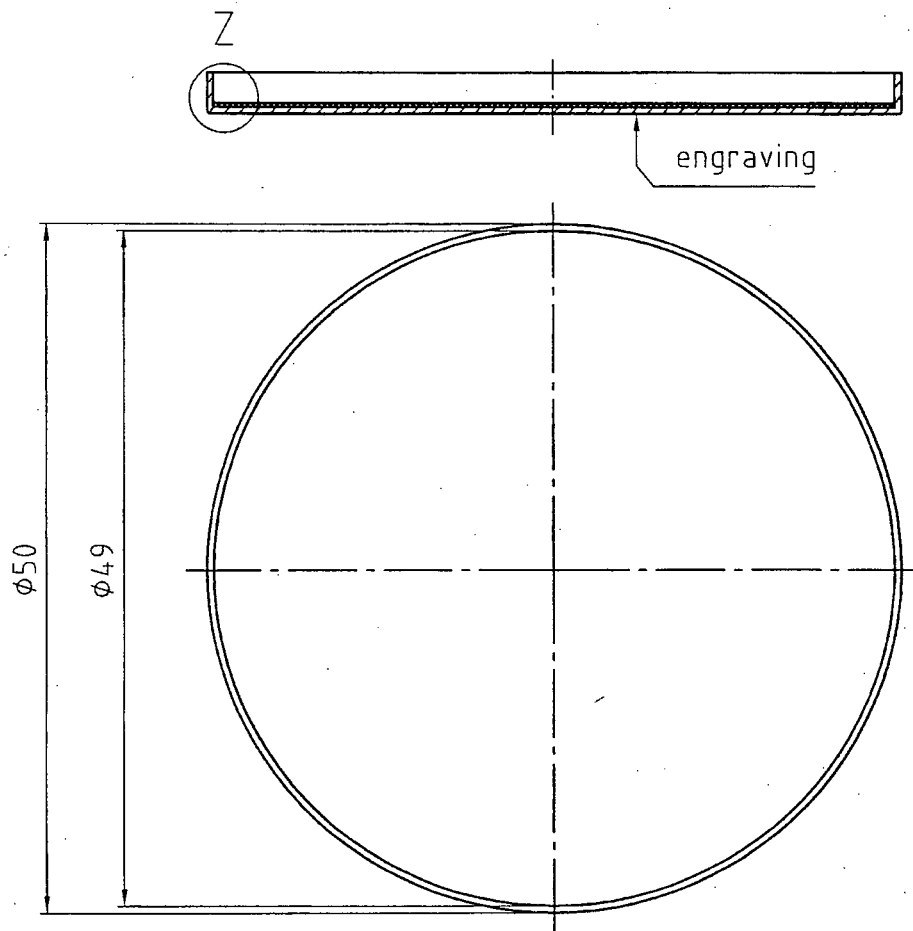
Z 20:1

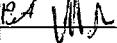

anodized aluminium foil
thickness of the activated
anodized layer: approx. 5µm

surface black anodized

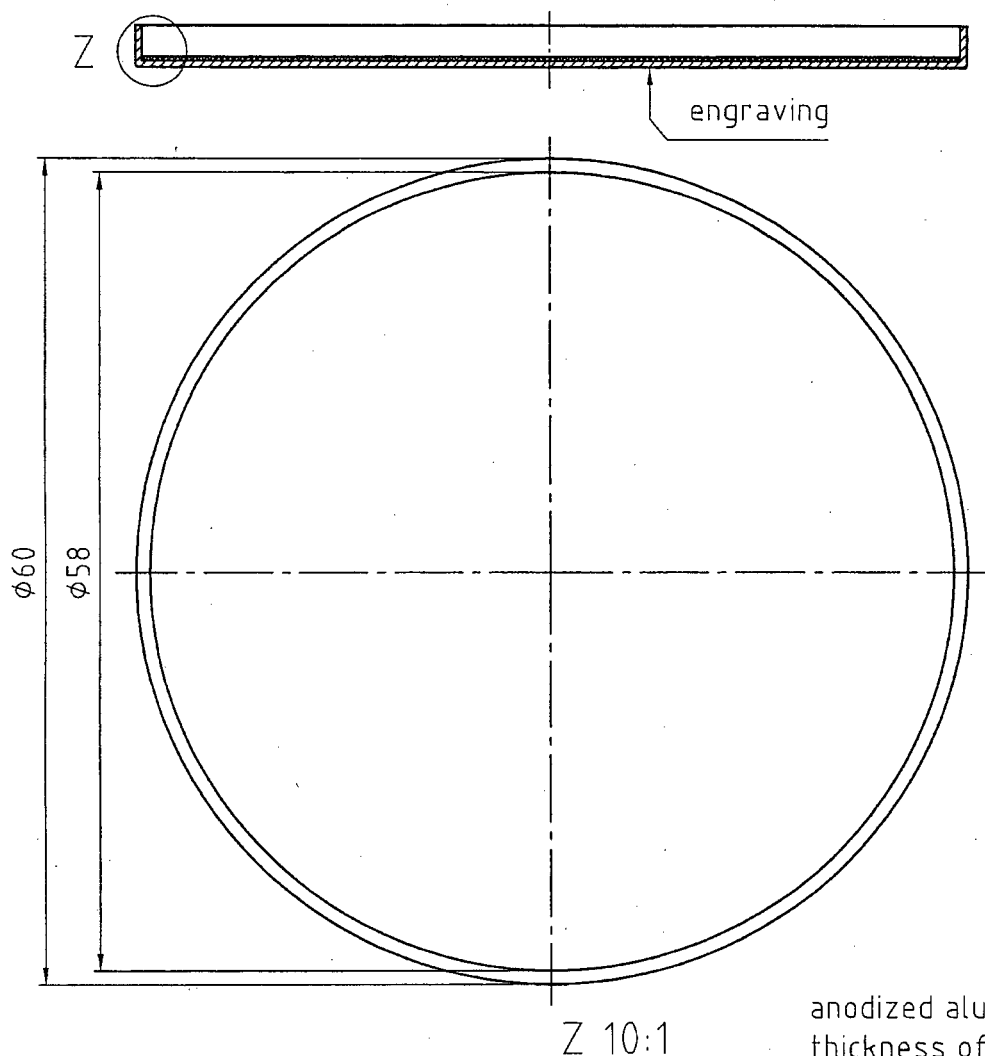


various nuclides				DIN ISO 2768 X m X		Surface	Scale 2:1	aluminium		
				Date	Name	ALPHA BETA REFERENCE SOURCE				
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				Appr.						Pet 
				 Eckert & Ziegler		VZ-1964-001			Page 1	
				Nuclitec					1 pag.	
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Issue	Change	Date	Name	EDV No. public\exchange\Zeichnungen\1751-2000\Verkaufszeichnung\VZ1964A.dwg						

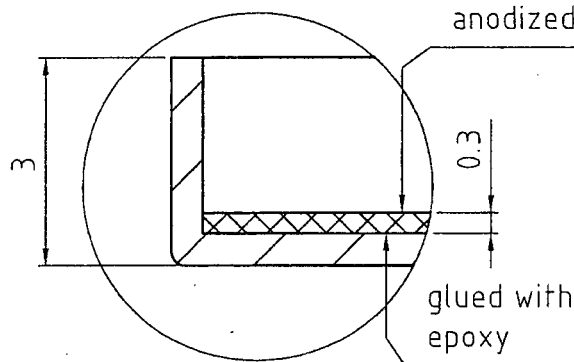



various nuclides				DIN ISO 2768 f m c		Surface	Scale 2:1	stainless steel		
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				Appr.						
						Eckert & Ziegler	VZ-1430-001		Page 1	
C	firm logo	17.06.2009	DST	Nuclitec		1 pag				
B	firm logo	02.12.2008	DST							
Issue	Change	Date	Name	EDV No.	public\exchange\Zeichnungen\1251-1500\VerkaufsZeichnung\VZ1430D.dwg					

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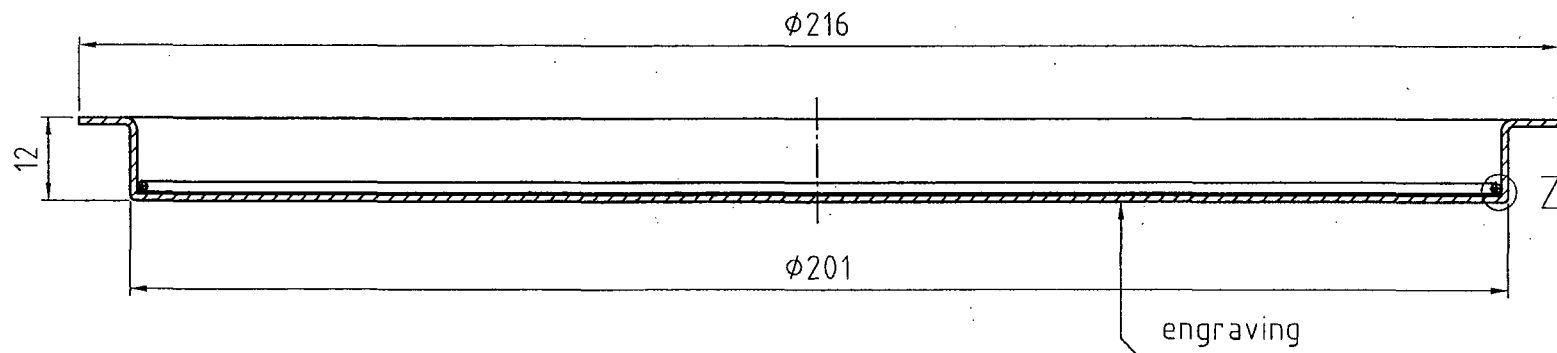


anodized aluminium foil
thickness of the activated
anodized layer approx. 5µm

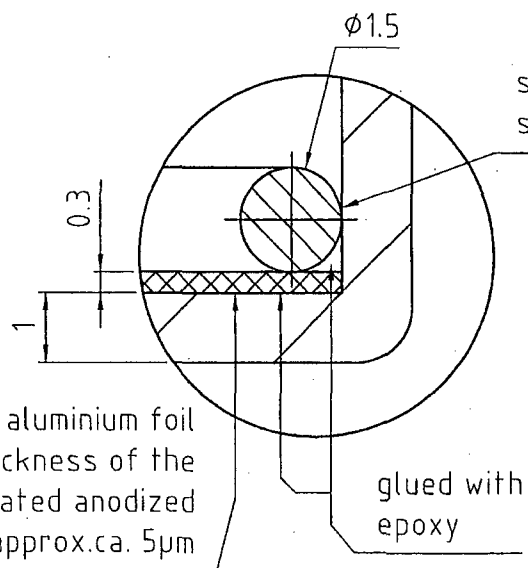


various nuclides				DIN ISO 2768 f m c		Surface	Scale 2:1	stainless steel	
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				Appr.	RT				
C	firm logo	17.06.2009	DST	 Eckert & Ziegler		VZ-1431-001			Page 1
BE	firm logo	02.12.2008	DST	Nuclitec					1 pag
Issue	Change	Date	Name	EDV No.	public\exchange\Zeichnungen\1251-1500\VerkaufsZeichnung\VZ1431D.dwg				

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Z 10:1



anodized aluminium foil
thickness of the
activated anodized
layer: approx.ca. 5µm

various nuclides		DIN ISO 2768 f m c	Surface	Scale 1:1	steel
		Date	Name	ALPHA BETA REFERENCE SOURCE	
		Drawn 17.06.2009	DStapper		
		Appr.			
D	firm logo	17.06.2009	DST	VZ-339-001	
CE	firm logo	29.04.2009	DST		
Issue		Change	Date	Name	EDV No. public\exchange\Zeichnungen\0251-0500\VerkaufsZeichnung\VZ339\VZ339E.dwg



Eckert & Ziegler

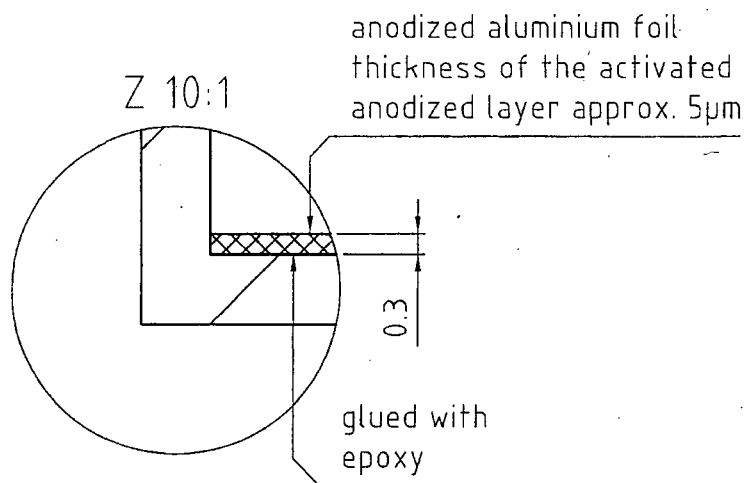
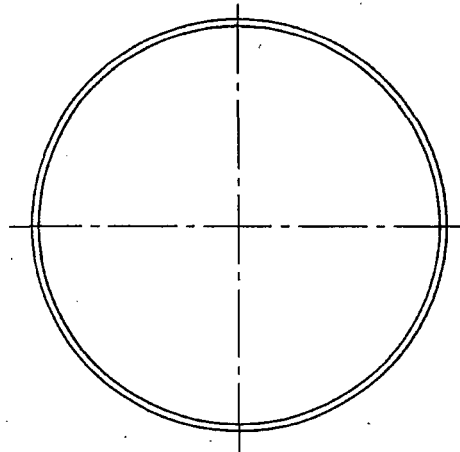
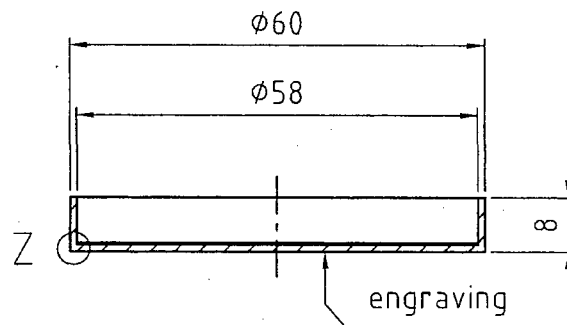
Nuclitec


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Page

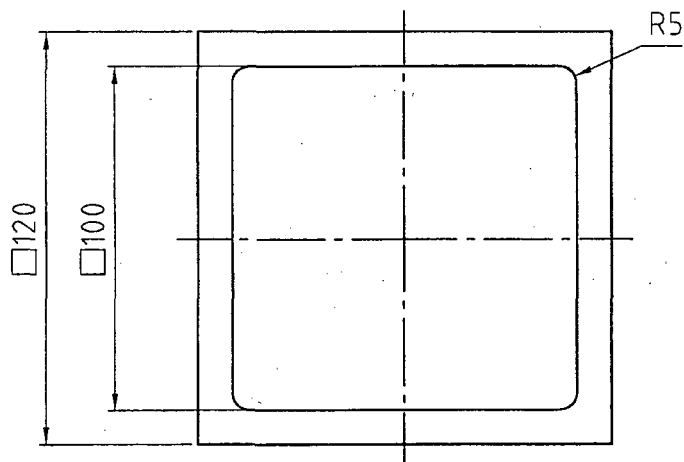
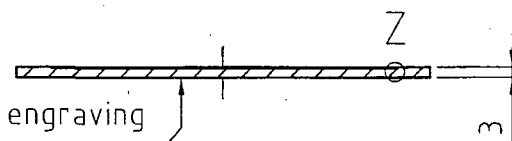
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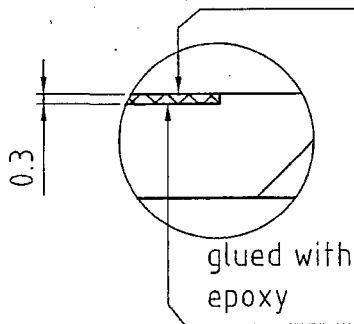
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				Appr.	<i>[Signature]</i>				
E	firm logo	17.06.2009	DST	 Eckert & Ziegler		VZ-1392-001			Page 1
D	firm logo	22.04.2009	DST	Nuclitec					1 pag.
BE	firm logo	01.09.2008	DStapper						
Issue	Change	Date	Name	EDV No. \public\exchange\Zeichnungen\1251-1500\VerkaufsZeichnung\VZ1392F.dwg					


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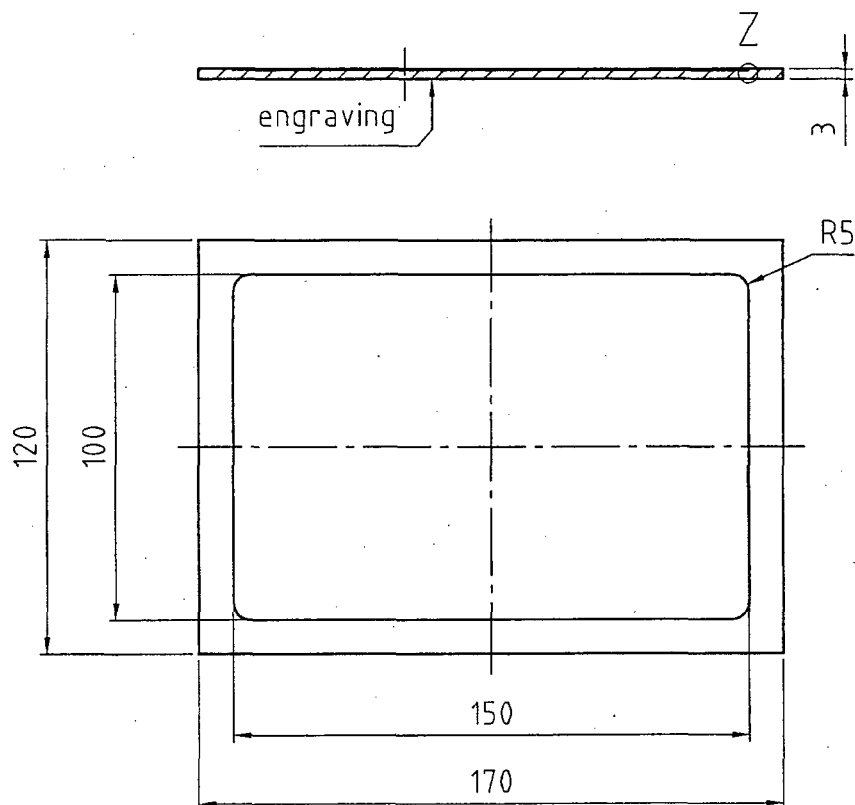


Z 5:1

anodized aluminium foil
thickness of the activated
anodized layer approx. 5µm

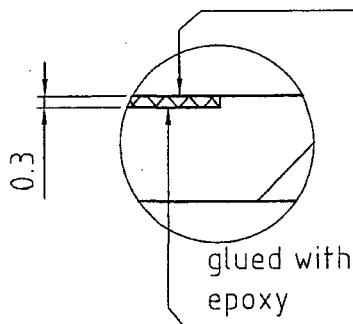



various nuclide				DIN ISO 2768 f m e		Surface	Scale 1:2	aluminium	
				Date	Name	WIDE AREA REFERENCE SOURCE			
				Drawn	17.06.2009 DSTapper				
				Appr.	RT [Signature]				
B	firm logo	17.06.2009	DST	 Eckert & Ziegler Nuclitec		VZ-626-001		Page 1	
A	firm logo	21.11.2008	DST					1 pag.	
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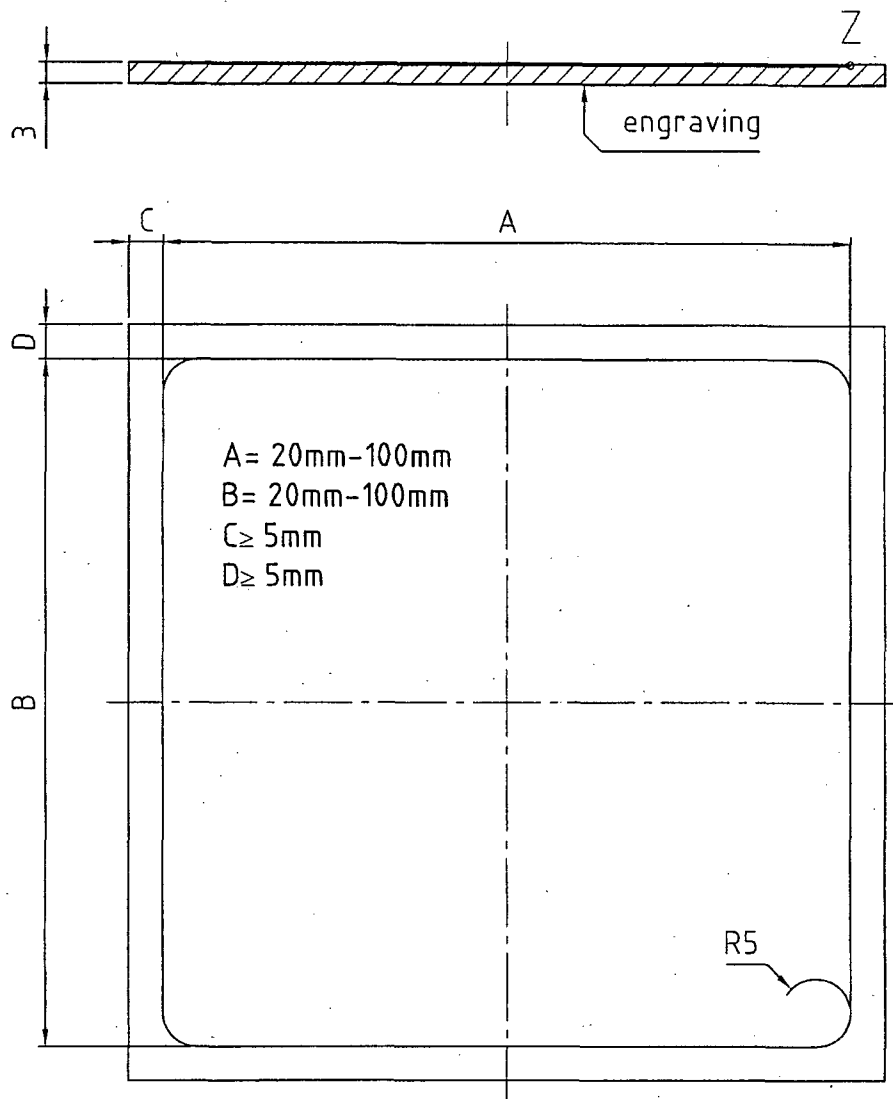
Z 5:1

anodized aluminium foil
thickness of the activated
anodized layer approx. 5µm

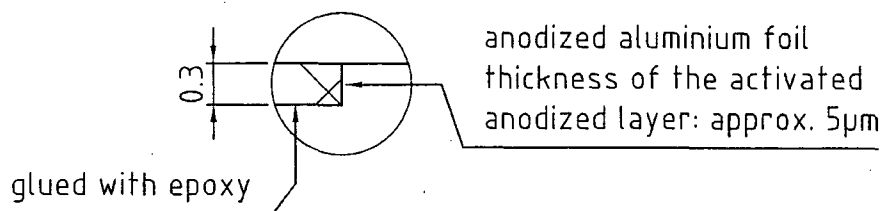



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A	firm logo	21.11.2008	DST							1 pag	
	name; logo	19.04.2007	DStapper			Nuclitec					
Issue	Change	Date	Name	EDV No.	\\Aeant6\CAD Zeichnungen\0501-0750\VerkaufsZeichnung\VZ628C.dwg						

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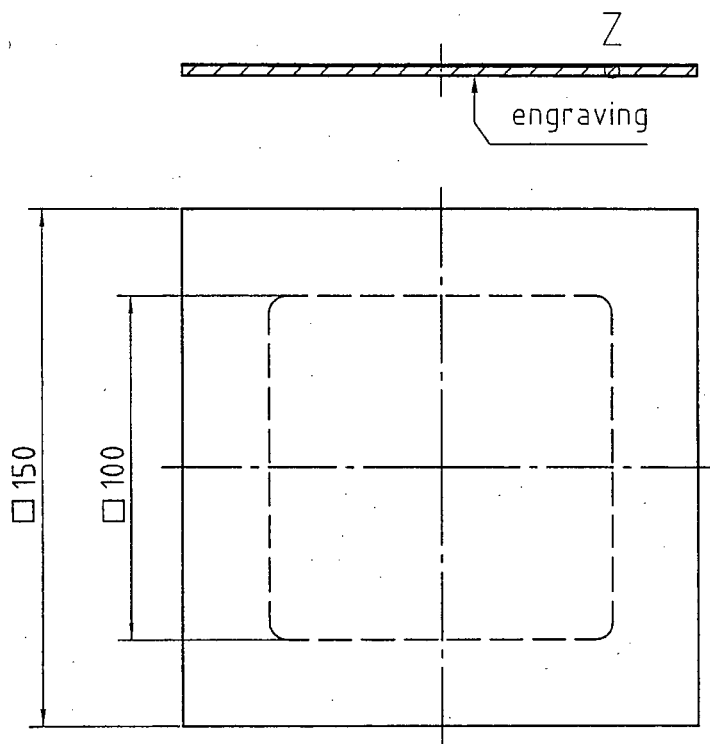


Z 20:1

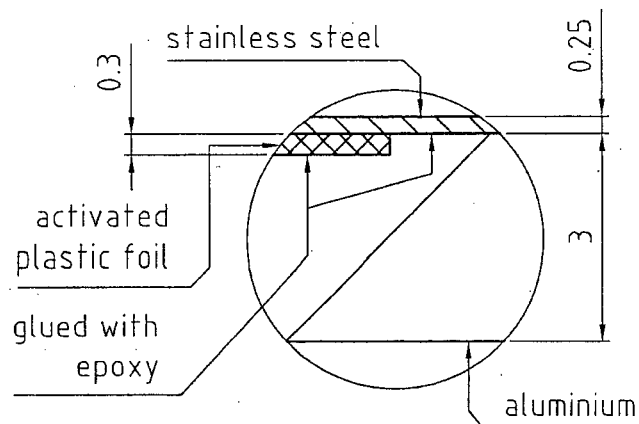


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					Date	Name	LARGE AREA REFERENCE SOURCE		
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				Appr.		<i>Pet</i>			
						<i>[Signature]</i>			
						Eckert & Ziegler	VZ-1658-001		Page 1
E	firm logo	12.10.2009	DST			Nuclitec			1 pag
Issue	Change	Date	Name	EDV No. public\exchange\Zeichnungen\1501-1750\VerkaufsZeichnung\VZ1658A.dwg					

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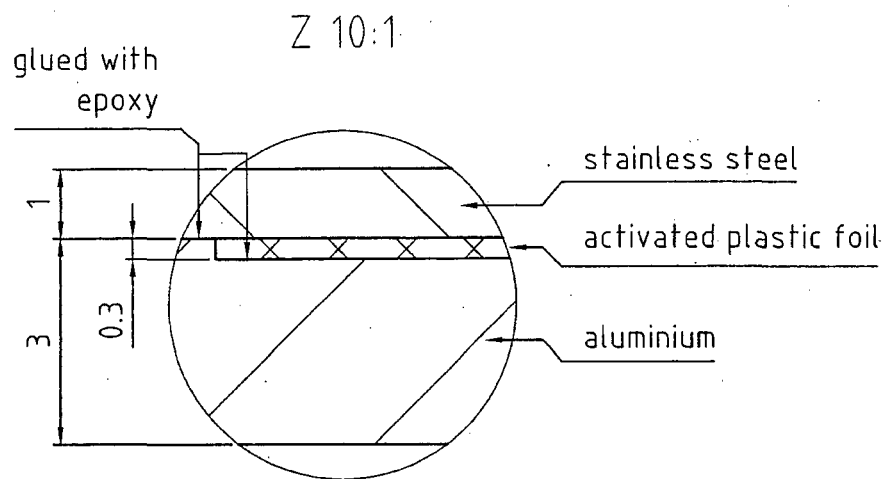
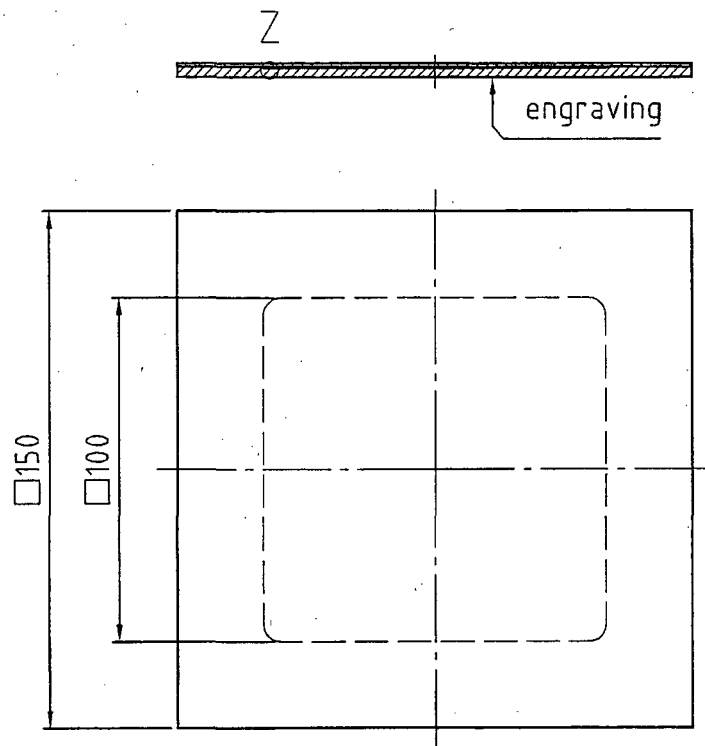



Z 10:1



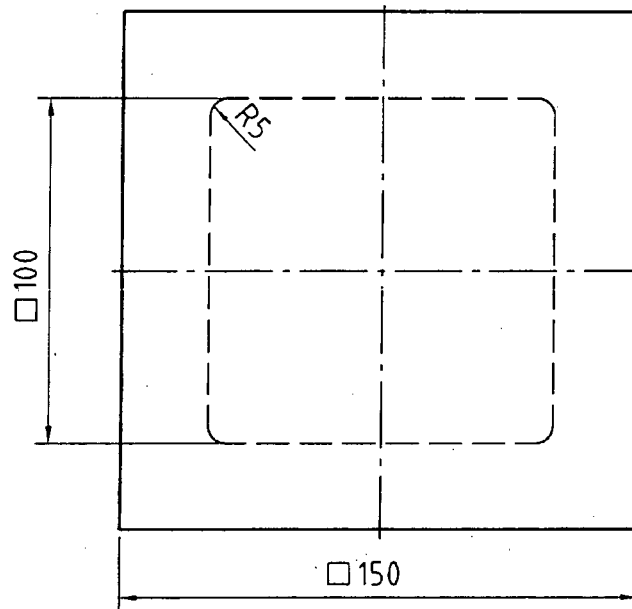
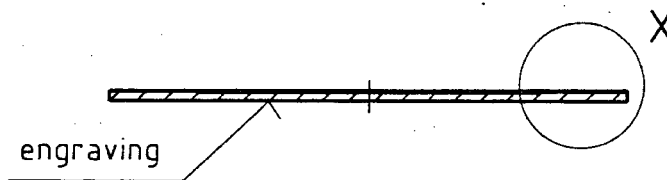
Co-57 or Am-241				DIN ISO 2768 X m X		Surface	Scale 1:2
				aluminium stainless steel			
				Date	Name	GAMMA REFERENCE SOURCE	
				Drawn 18.06.2009	DStapper		
				Appr.	<i>PA</i>		
				Eckert & Ziegler		VZ-1776-001	
				Nuclitec			
AE	firm logo	18.06.2009	DST			Page 1	
Issue	Change	Date	Name	EDV No. public\exchange\Zeichnungen\1751-2000\Verkaufszeichnung\VZ1776B.dwg			

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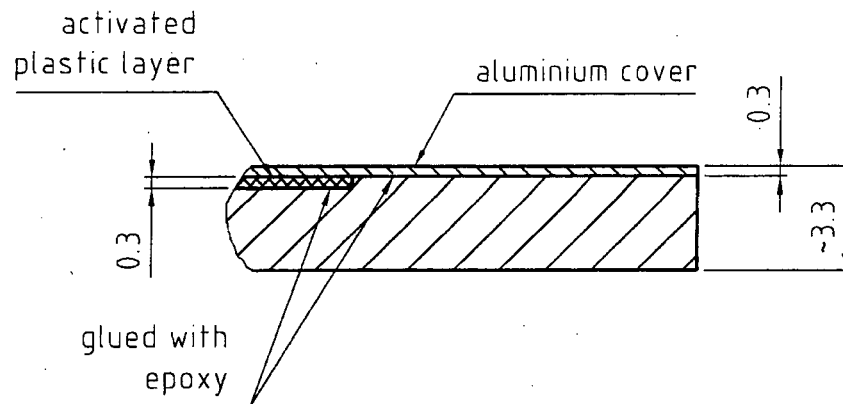


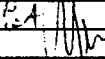

Cs-137				DIN ISO 2768 X m x		Surface	Scale 1:2		
							aluminium stainless steel		
					Date	Name	GAMMA REFERENCE SOURCE		
				Drawn	29.09.2009	DStapper			
				Appr.		<i>P. A. [Signature]</i>			
						Eckert & Ziegler	VZ-2162-001		
						Nuclitec			
E	firm logo	29.09.2009	DST				Page 1		
Issue	Change	Date	Name	EDV No. public\exchange\Zeichnungen\2001-2250\Verkaufszeichnung\VZ2162A.dwg					1 pag.

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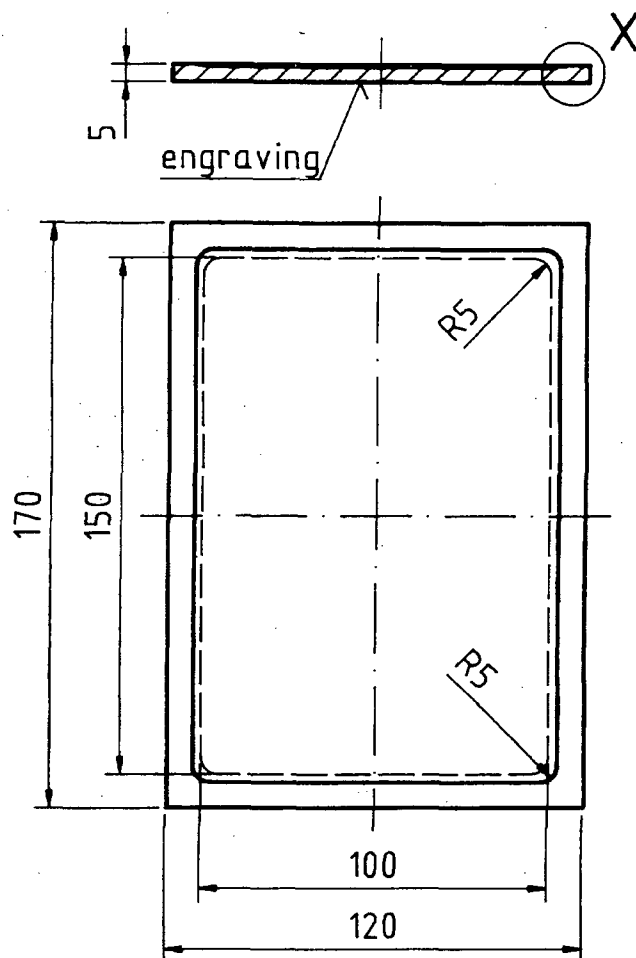


X 5:1

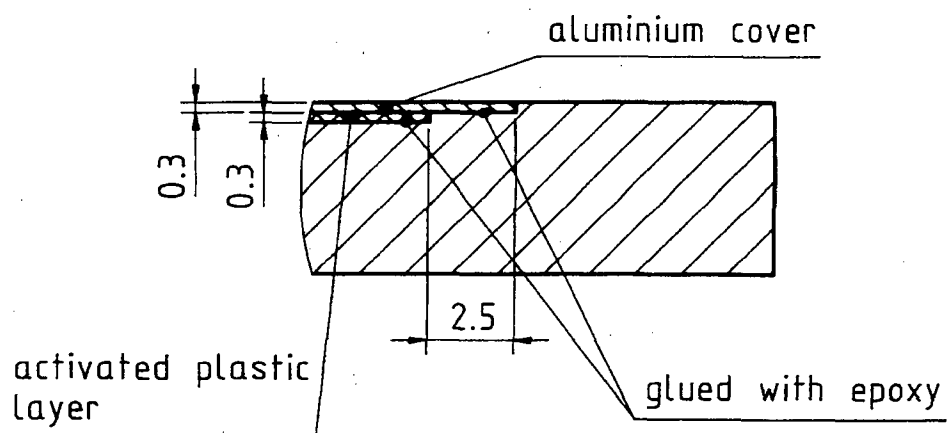



Co-60 or I-129				DIN ISO 2768 f m e		Surface	Scale 1:2	aluminium	
				Date	Name	GAMMA REFERENCE SOURCE			
				Drawn 09.06.2005	DSapper				
				Appr.					
				AEA TECHNOLOGY 		VZ-1898-001			Page 1
				QSA					1 pag.
Issue	Change	Date	Name	EDV No.	Zeichnungen\1751-2000\Verkaufszeichnung\VZ1898B.dwg				

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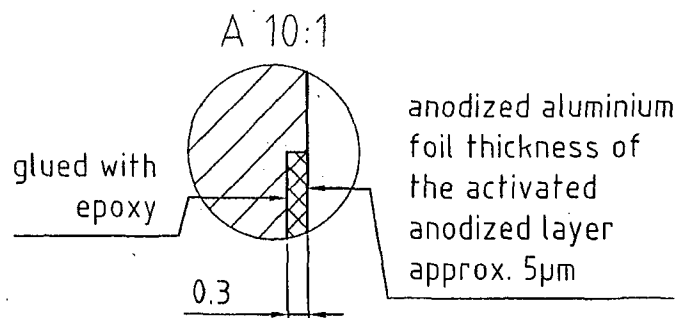
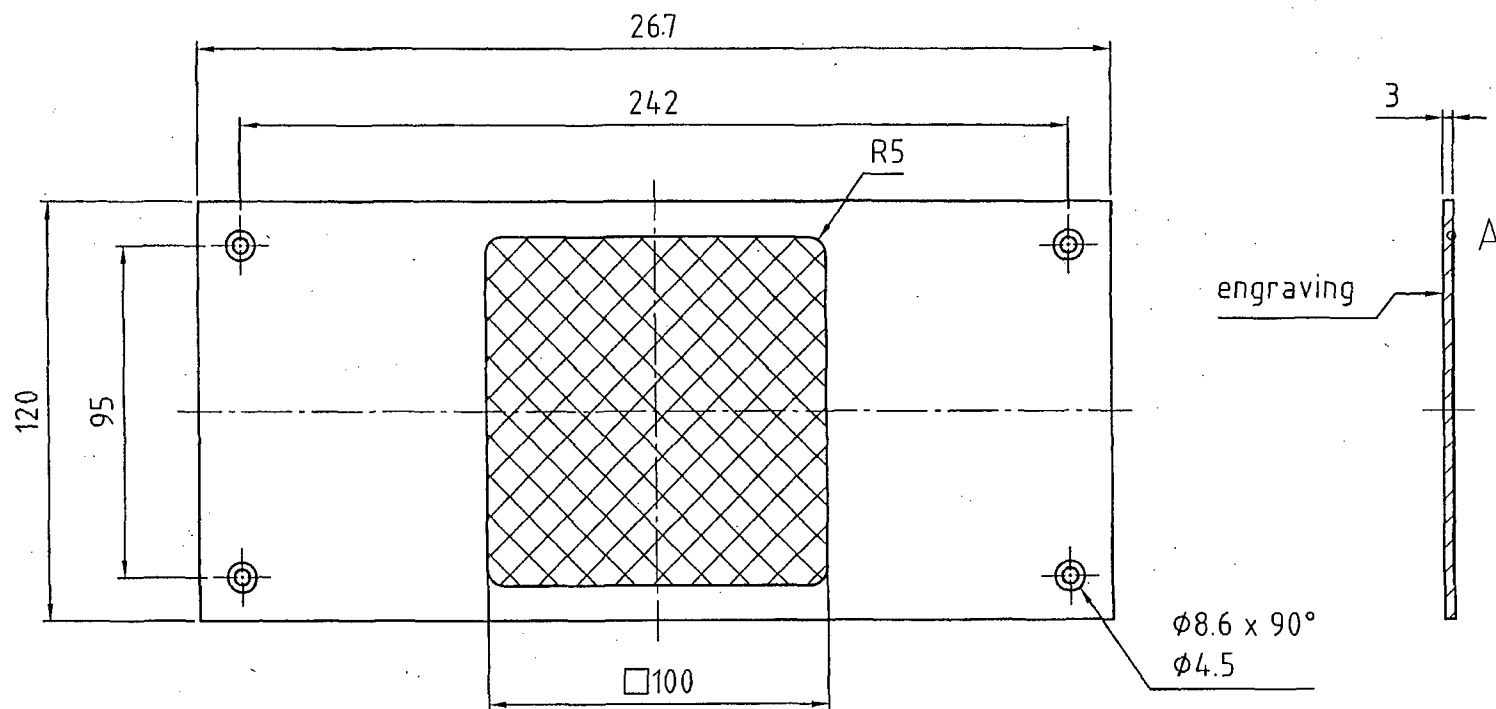


X 5:1



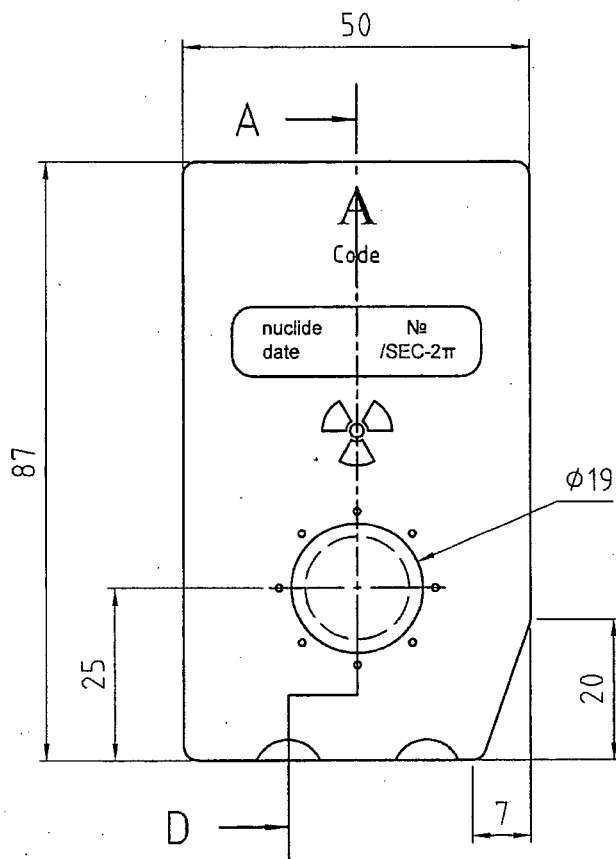
various nuclides				DIN ISO 2768 mm m mm		Surface	Scale 1:2 (5:1)	aluminium	
							-	-	
				Date	Name	WIDE-AREA REFERENCE SOURCE			
				Drawn 16.01.95	Bu.				
				Appr.	<i>et al.</i>				
				 Amersham The Health Science Group		VZ-1958		Page	
								pag	
Issue	Change	Date	Name	EDV No. 09\ VZ1958E					

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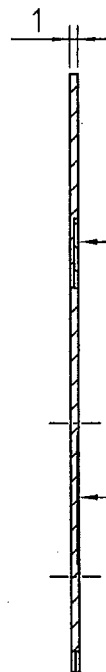


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						aluminium	
				Date	Name	WIDE AREA REFERENCE SOURCE	
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				Appr.	<i>P. L. M.</i>		
				Eckert & Ziegler		VZ-1634-002	
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B	firm logo	06.01.2010	DST	Page 1			
Issue	Change	Date	Name	1 pag.			

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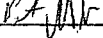



A-D

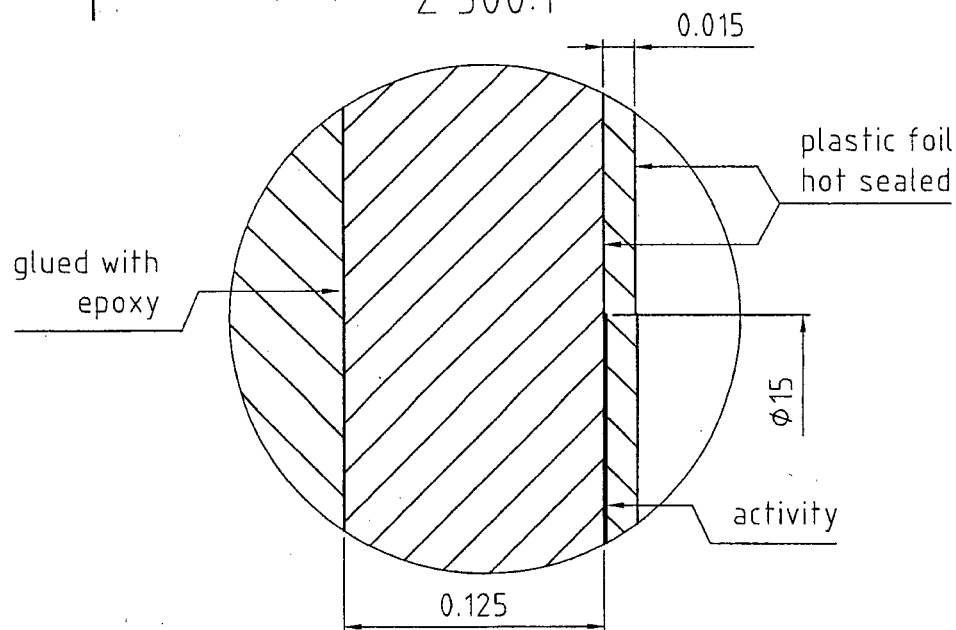
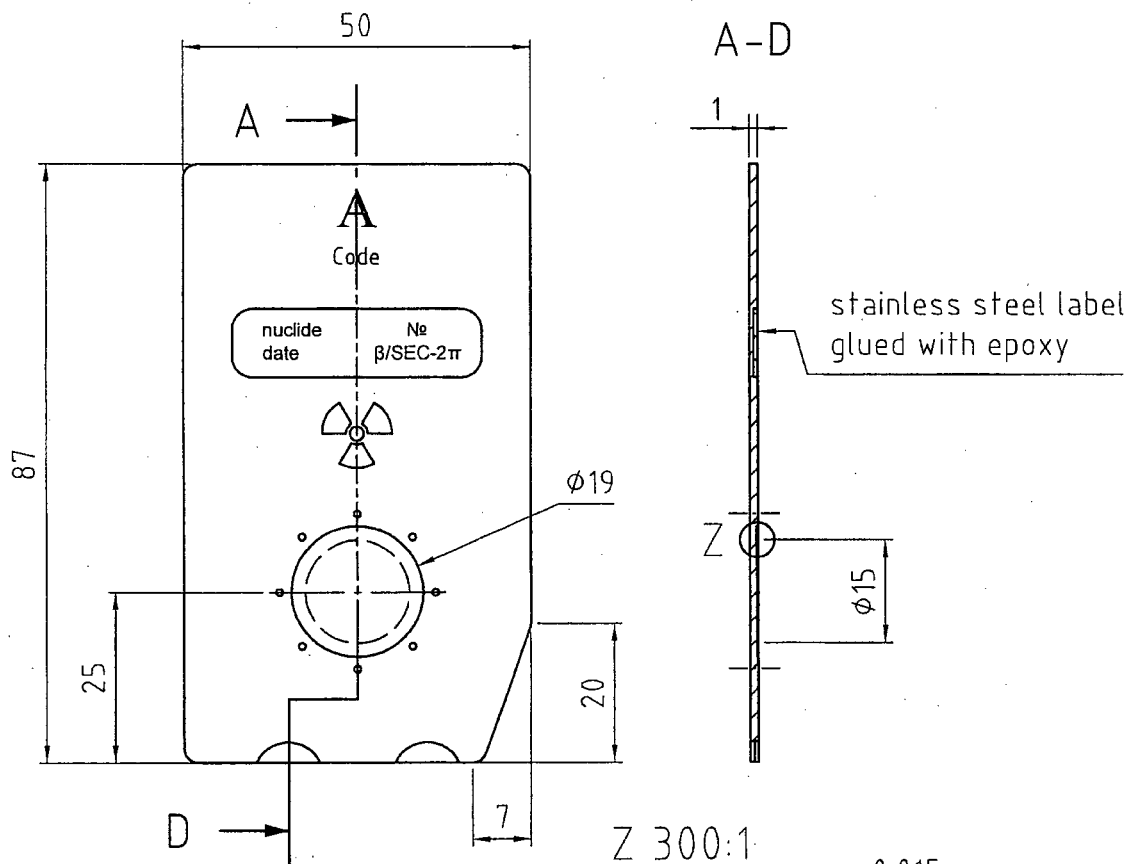



stainless steel label
glued with epoxy

anodized aluminium foil
thickness of the activated
anodized layer: approx.
0.005mm glued with epoxy

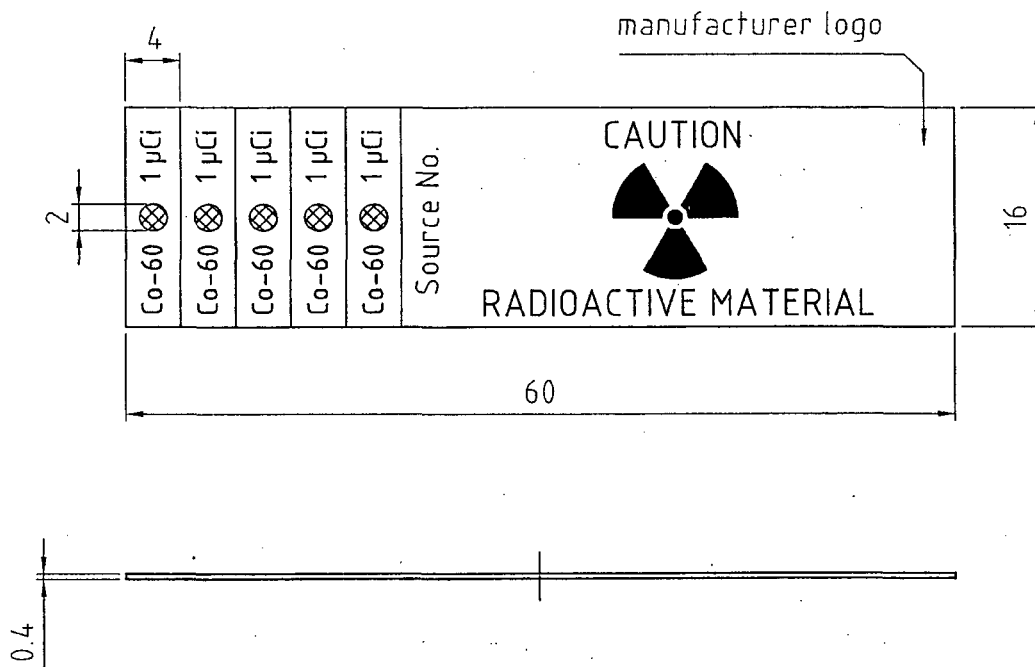
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				Appr.						
						Eckert & Ziegler		VZ-2020-001		
F	firm logo	18.06.2009	DST	Nuclitec						
E	firm logo	29.01.2009	ThD							
Issue	Change	Date	Name	EDV No. \Zeichnungen\2001-2250\Verkaufszeichnung\VZ2020G.dwg						Page 1
										1 pag

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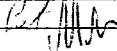

various nuclides				DIN ISO 2768 ± m		Surface	Scale 1:1		stainless steel			
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				Appr.								Pst. [Signature]
F	firm logo	18.06.2009	DST	 Eckert & Ziegler		VZ-2029-001				Page 1		
AE	firm logo	29.01.2009	ThD	Nuclitec						1 pag.		
Issue	Change	Date	Name	EDV No. \Zeichnungen\2001-2250\Verkaufszeichnung\VZ2029B.dwg								

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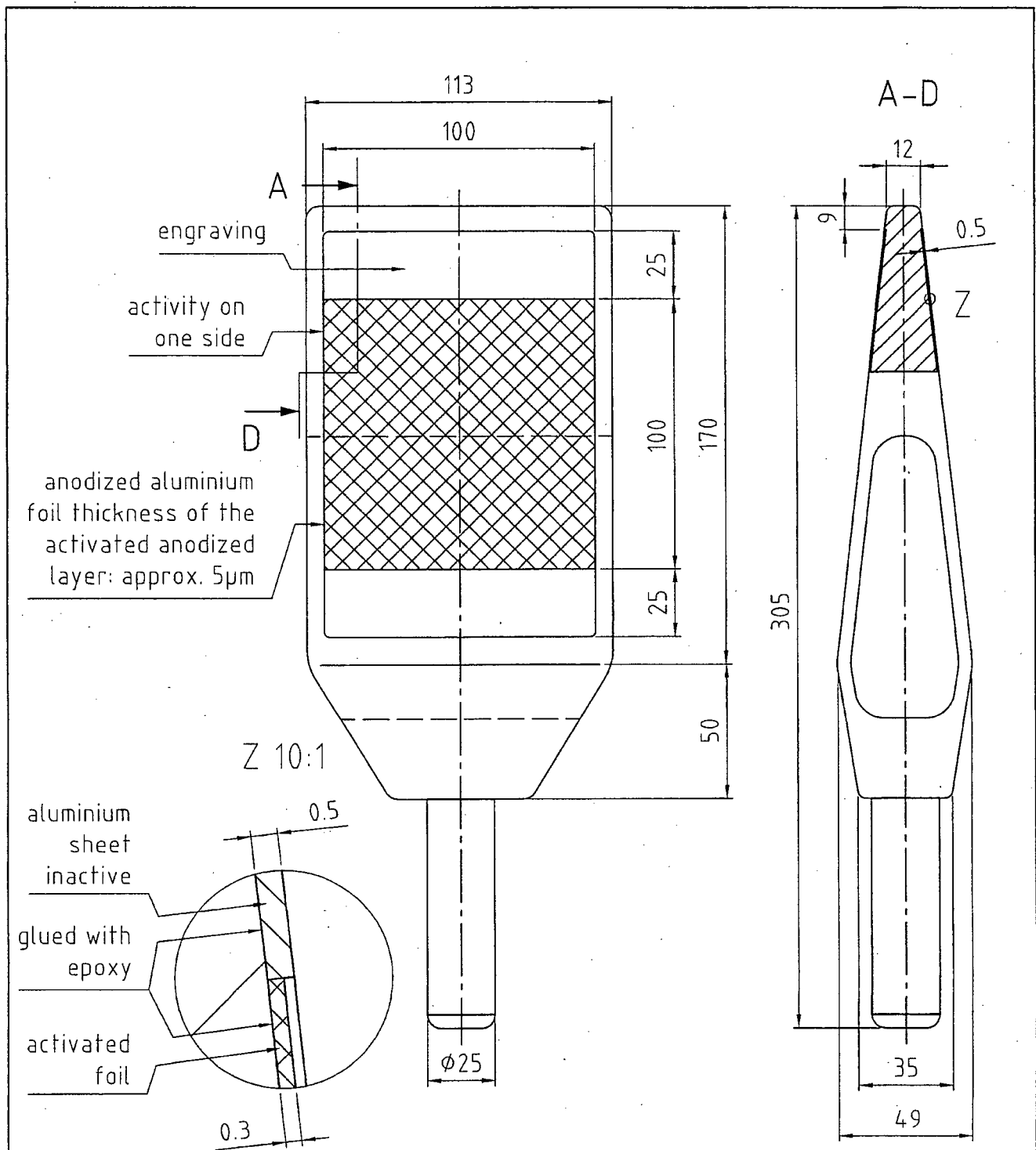




NOTE

all dimensions in millimeter
background colour: yellow
type colour: black

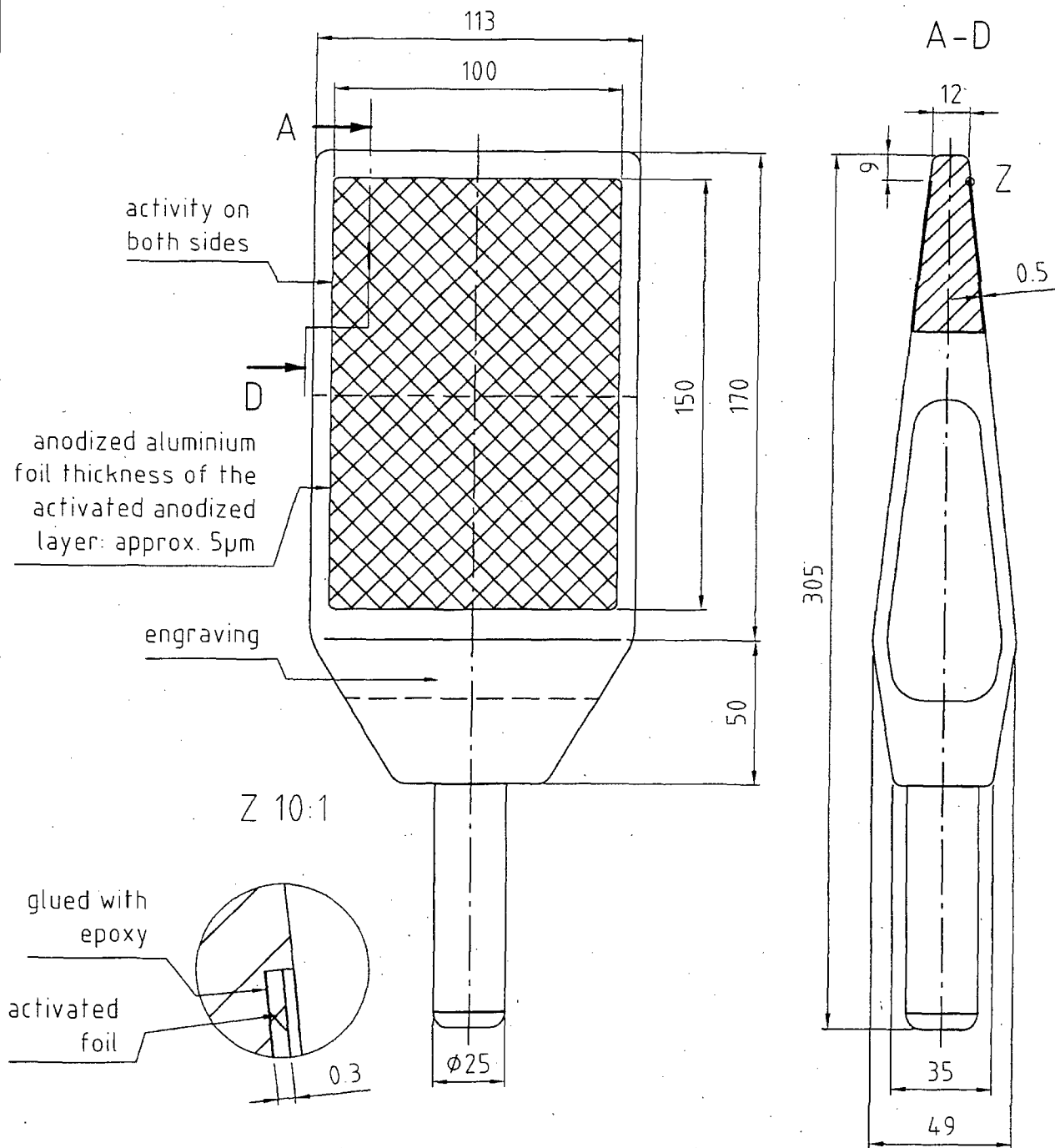
Co-60				DIN ISO 2768 f m c		Surface	Scale 2:1
							plastic
				Date	Name	Co-60 SOURCE	
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				Appr.			
						VZ-3433-001	
				 Eckert & Ziegler		Page 1	
				Nuclitec			
E	firm logo	08.10.2009	DST			1 pag	
Issue	Change	Date	Name	EDV No. public\exchange\Zeichnungen\3251-3500\Verkaufszeichnung\VZ3433F.dwg			

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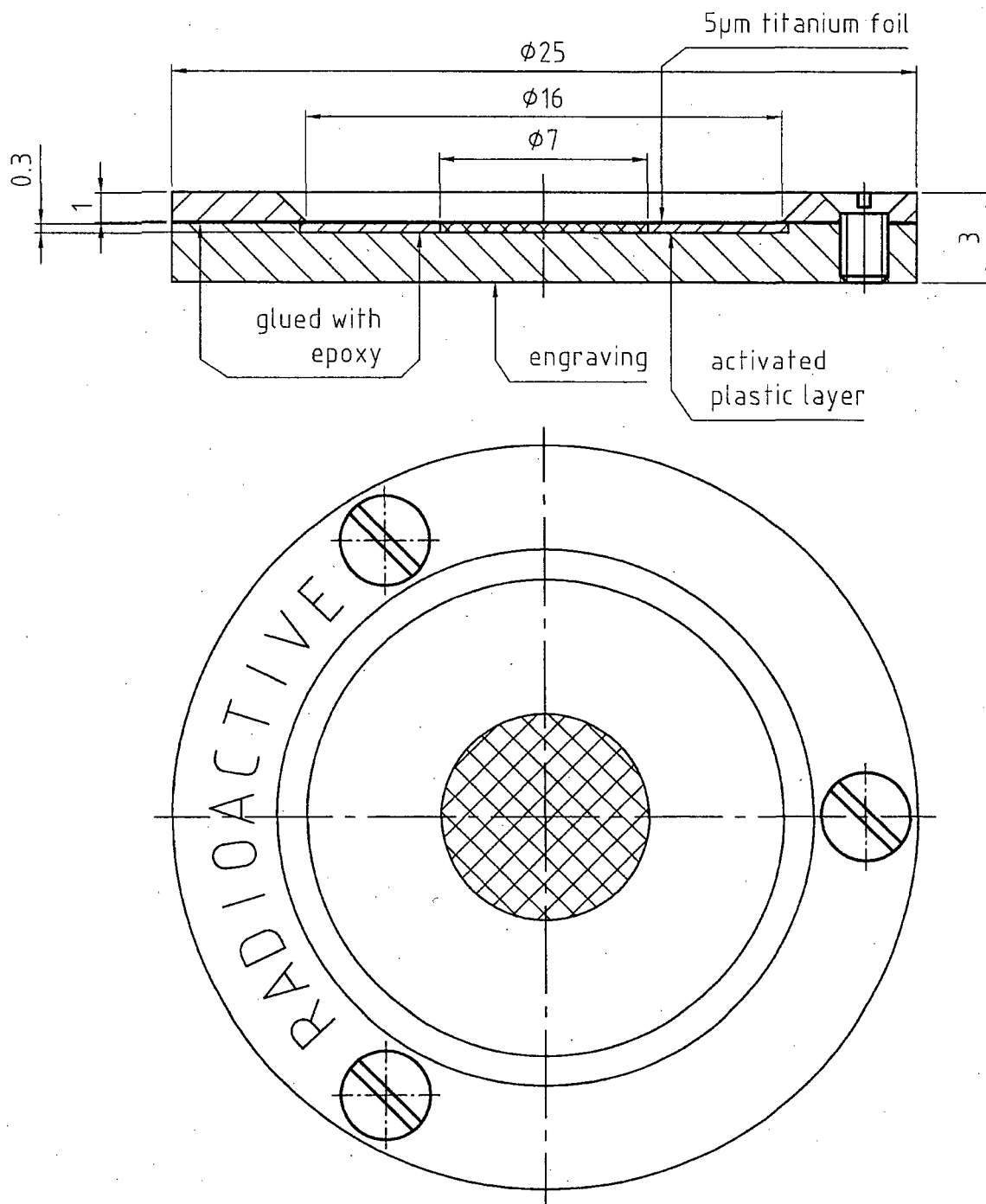
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				Date	Name	ALPHA BETA REFERENCE SOURCE				
				Drawn 18.06.2009	DStapper					
				Appr.						
A	firm logo	18.06.2009	DST	 Eckert & Ziegler		VZ-1614-001				Page 1
	material	31.05.2007	DStapper	Nuclitec						1 pag.
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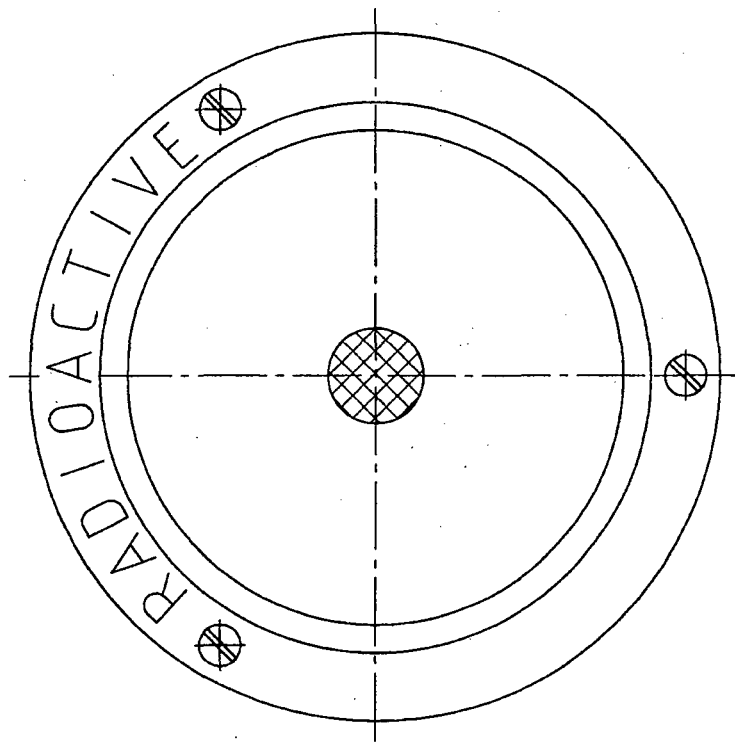
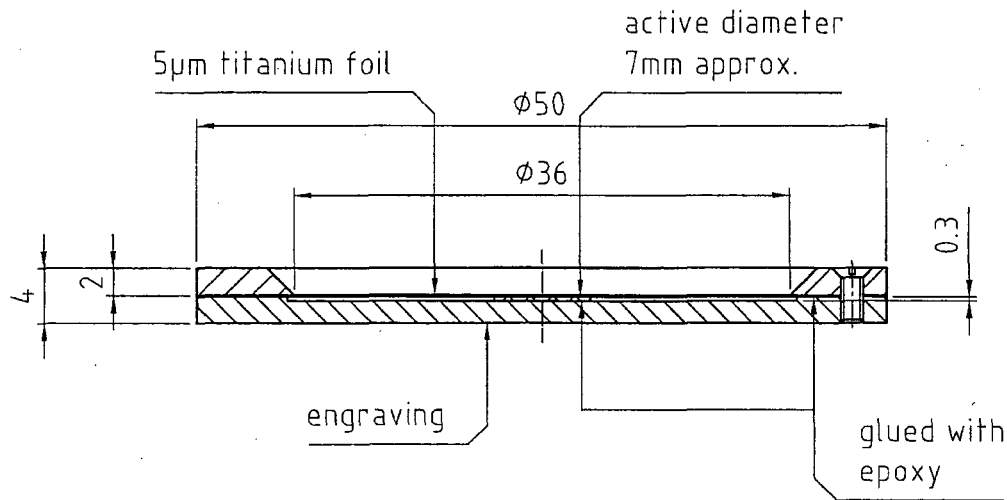
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		Date	Name	ALPHA BETA REFERENCE SOURCE		
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				VZ-1684-001		Page 1
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Issue	Change	Date	Name	EDV No. \\Aeant6\CAD Zeichnungen\1501-1750\VerkaufsZeichnung\VZ1684A.dwg		


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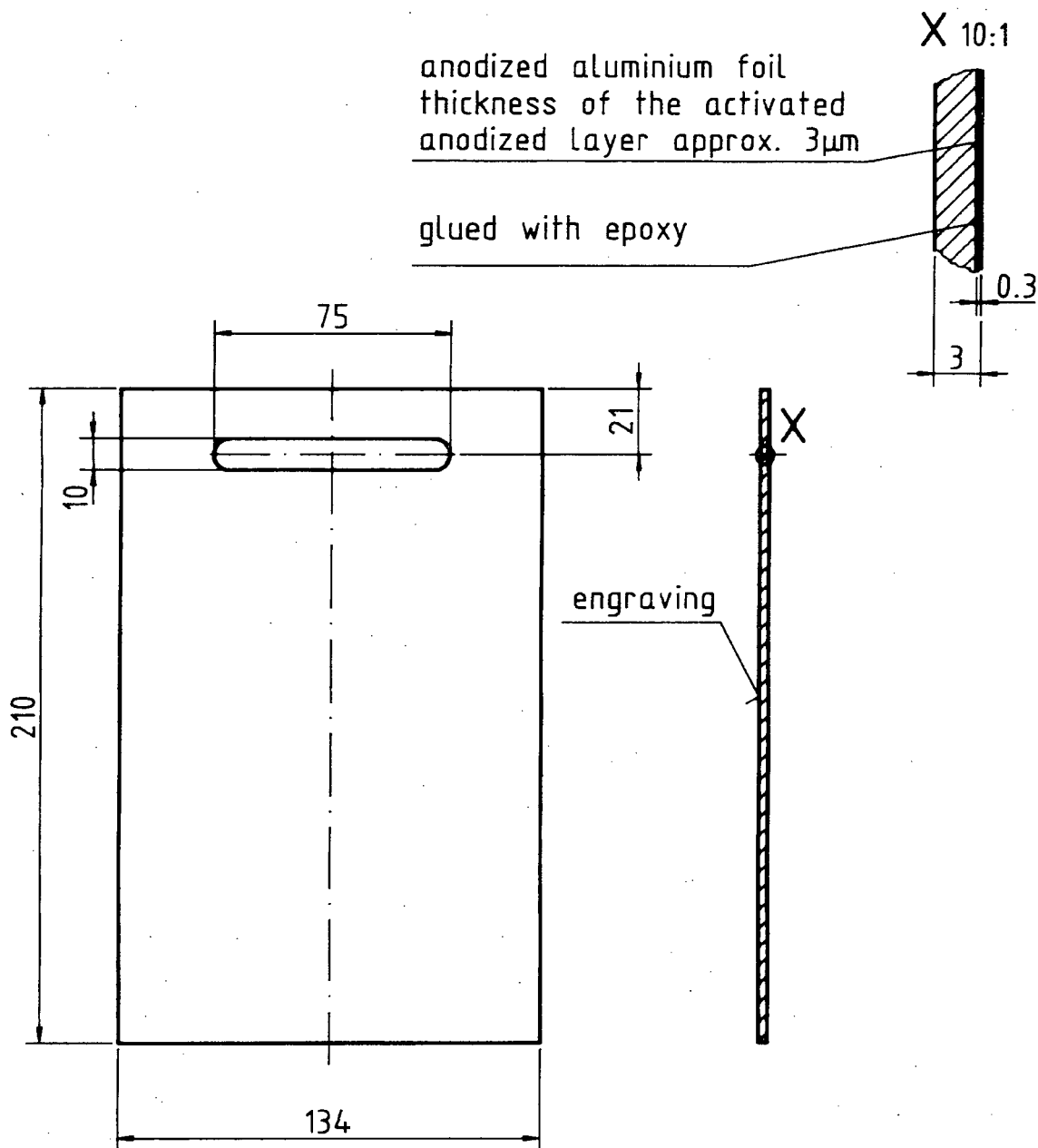
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				VZ-599-002		
A firmlogo		19.05.2009	DST	Eckert & Ziegler Nuclitec		Page 1
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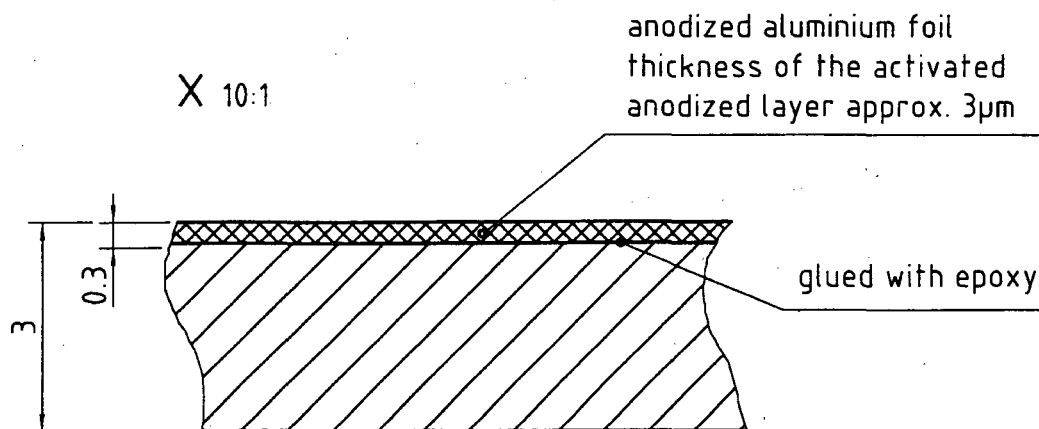
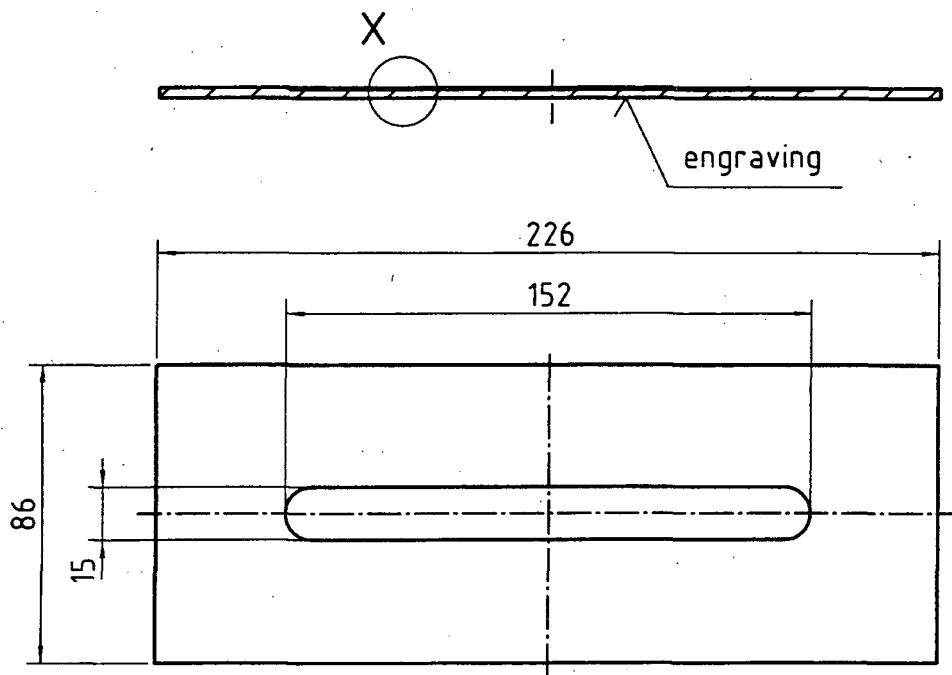
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B	firm logo	03.03.2009	DST	<div style="float: right;">Page 1</div>			
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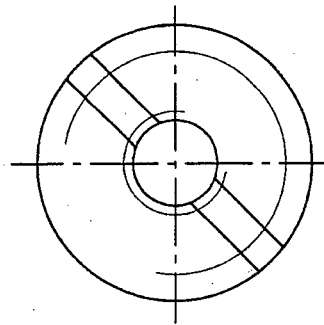
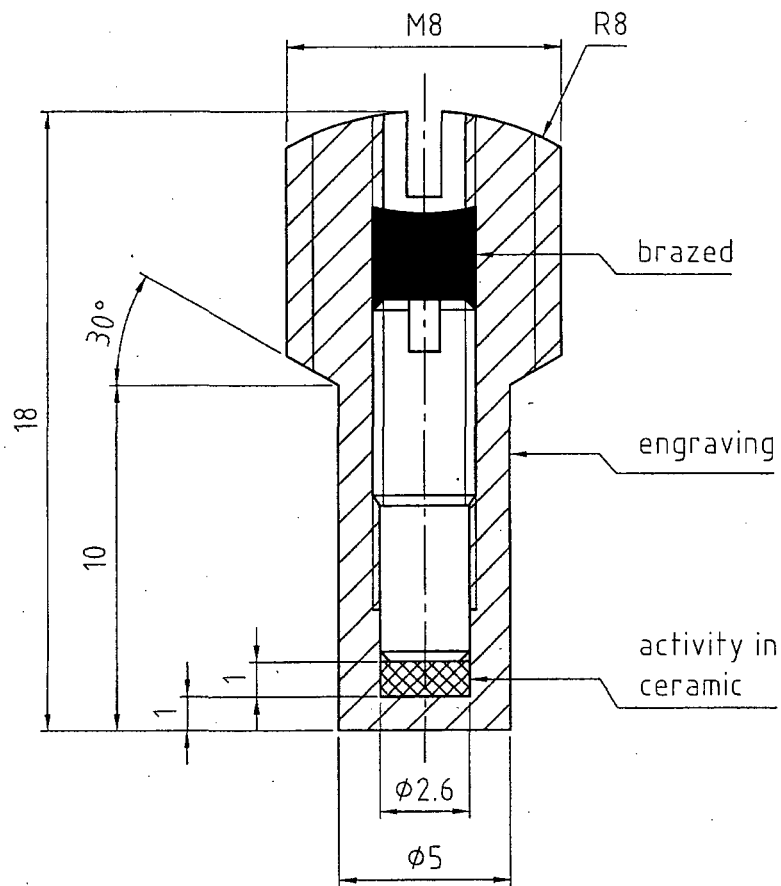
H-3 (tritium)		DIN ISO 2768 m		Surface	Scale 1:2 (10:1)	aluminium
		Date	Name	BETA- REFERENCE SOURCE		
		Drawn 21.12.94	Bu.			
		Appr.				
		Amersham The Health Science Group			VZ-1610	Page
		EDV No. 08\VZ1610				pag.



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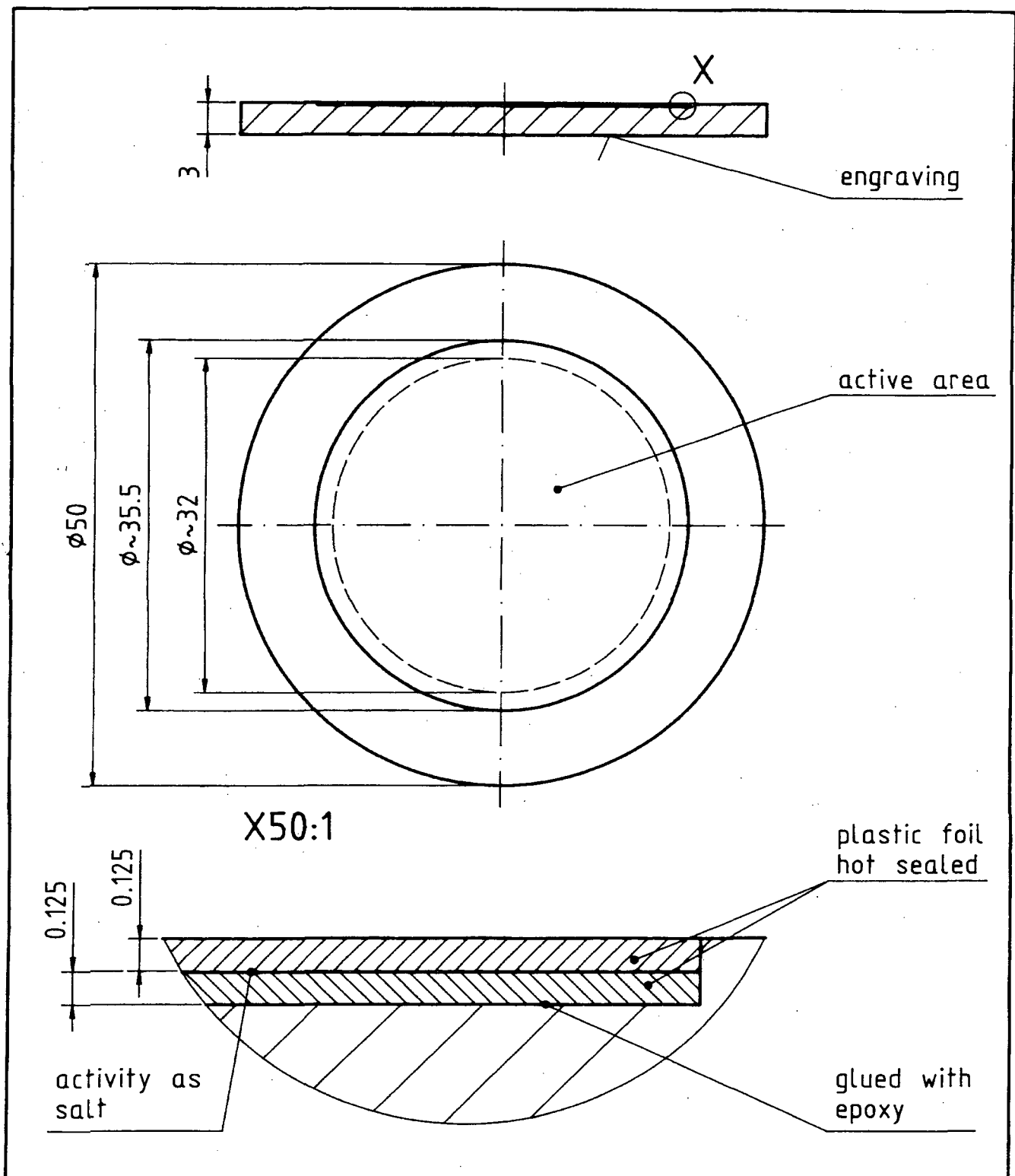
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Issue	Change	Date	Name	EDV No.	Zeichnungen\1501-1750\Verkaufszeichnung\VZ-1516-001.dwg				Page
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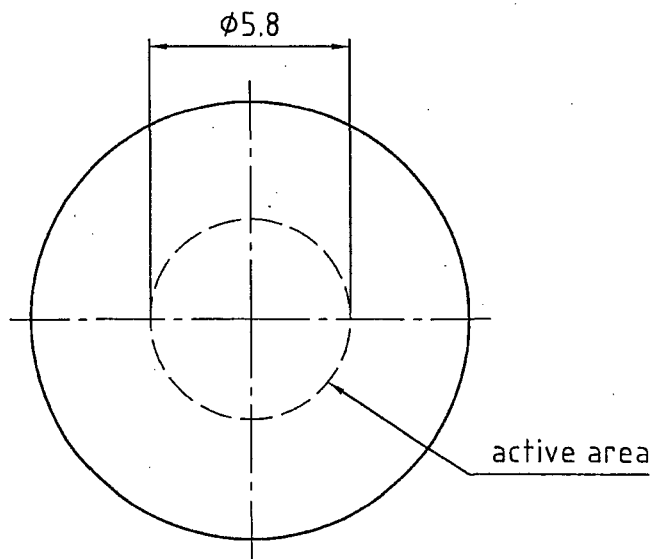
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EE	firm logo	21.11.2008	DStapper					Page 1				
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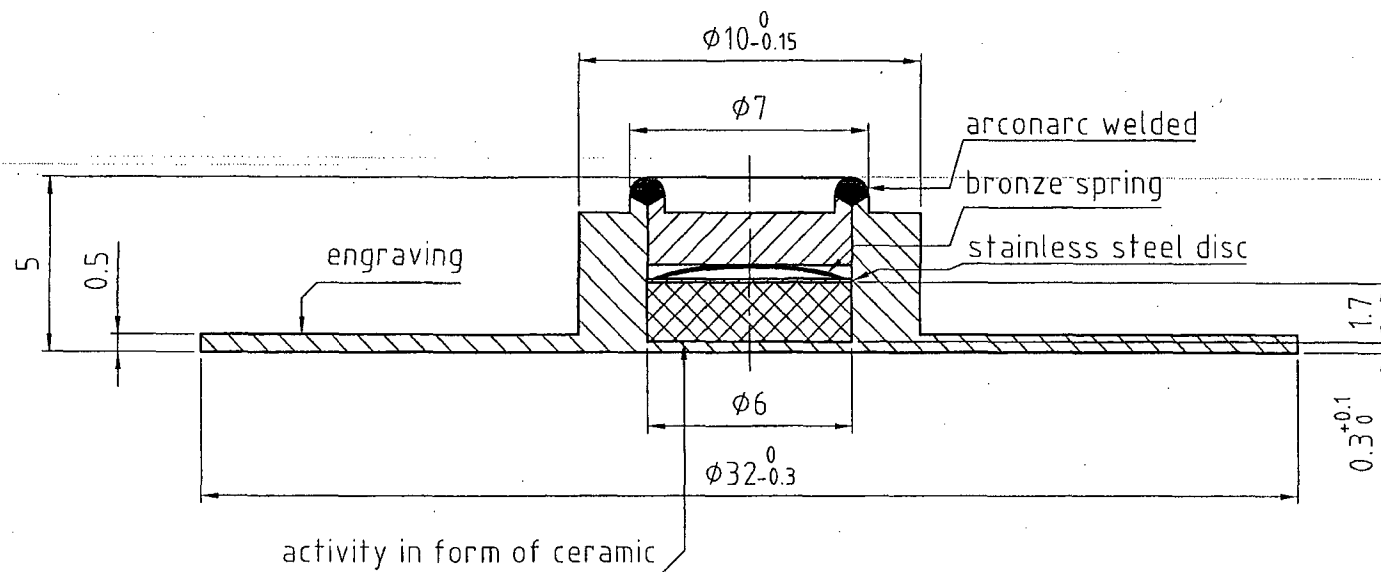
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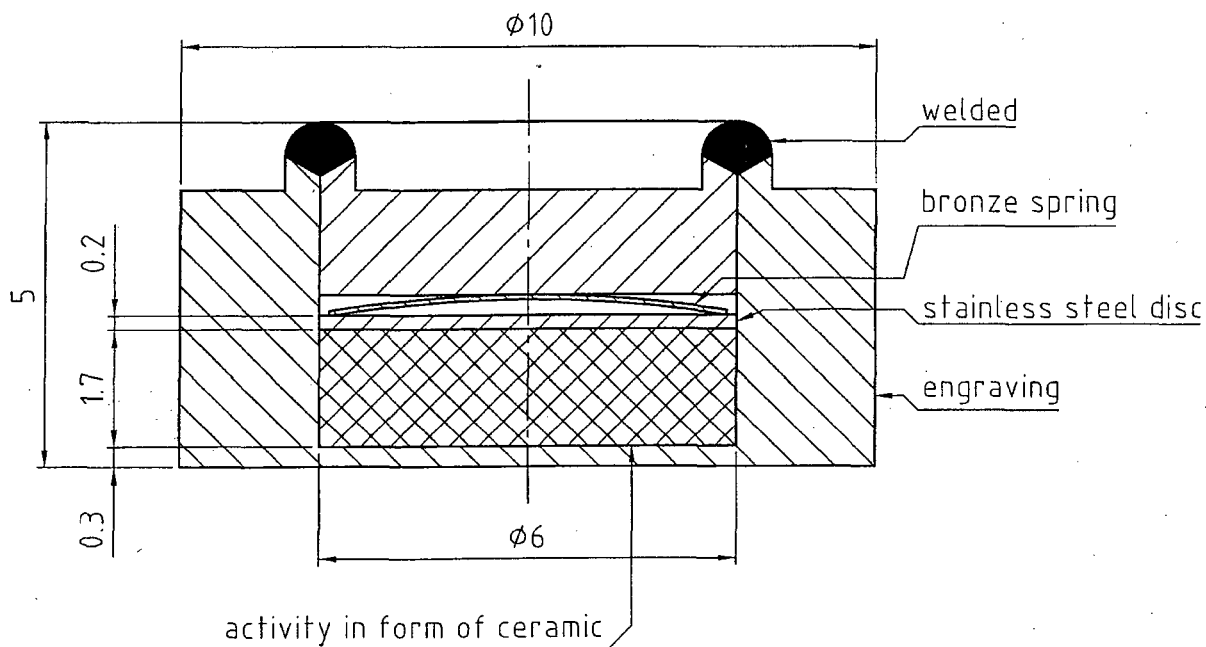
various nuclides		DIN ISO 2768 — f m —		Surface	Scale 2:1 (50:1)
					aluminium
		Date	Name	GAMMA- REFERENCE SOURCE	
		Drawn 03.08.95	Bu. <i>et al</i>		
		Appr.			
		Amersham The Health Sciences Group			VZ-2044
Issue	Change	Date	Name	EDV No. 10\VZ2044E	Page pag.


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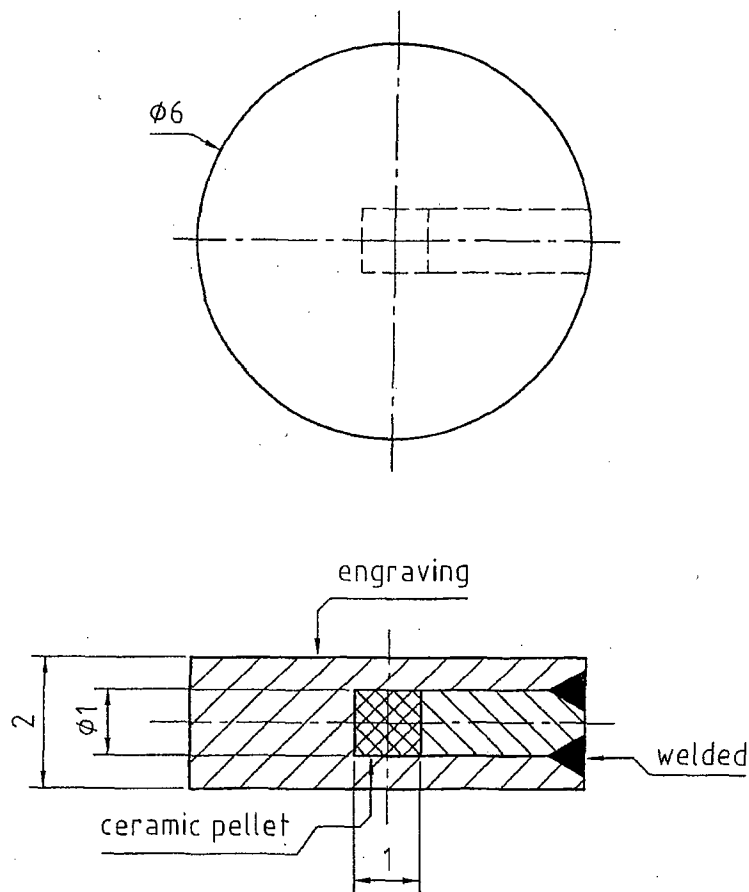




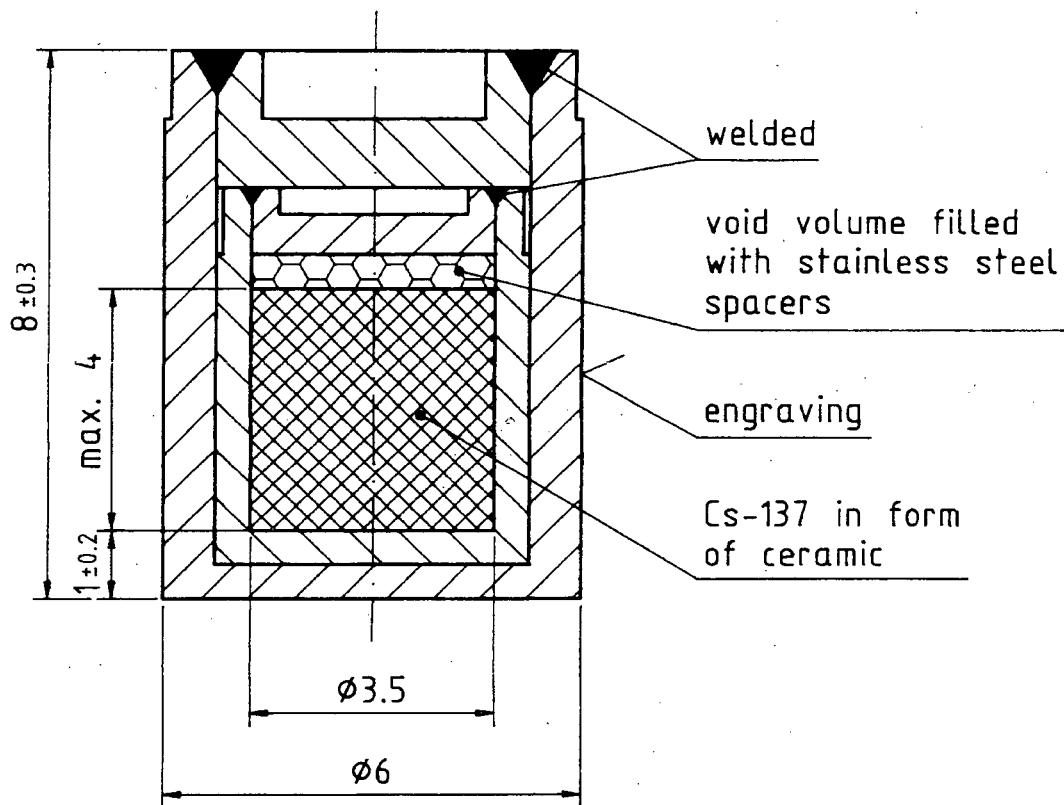
various nuclides				DIN ISO 2768 f m e		Surface	Scale 5:1	stainless steel 1.4541		
				Date	Name	GAMMA SOURCE				
				Drawn	28.05.2010					DStapper
				Appr.						
				Eckert & Ziegler Nuclitec		VZ-542-001			Page 1	
BE	firm logo	28.05.2010	DST	EDV No. exchange\Zeichnungen\0501-0750\VerkaufsZeichnung\VZ542C.dwg						
Issue	Change	Date	Name	The contents of this drawing and its enclosures are our property. The drawing and its enclosures may not be duplicated without our written approval nor be made accessible to any third party. Any unauthorised usage is unlawful and will be prosecuted. Copyright reserved.						



various nuclides				DIN ISO 2768 X m x		Surface	Scale 10:1		
							stainless steel 1.4541		
				Date	Name	GAMMA SOURCE			
			Drawn	28.05.2010	DSapper				
			Appr.		<i>[Signature]</i>				
				 Eckert & Ziegler Nuclitec			VZ-543-001		
AE	firm logo	28.05.2010	DST				Page 1		
Issue	Change	Date	Name	EDV No. exchange\Zeichnungen\0501-0750\VerkaufsZeichnung\VZ543B.dwg					1 pag.
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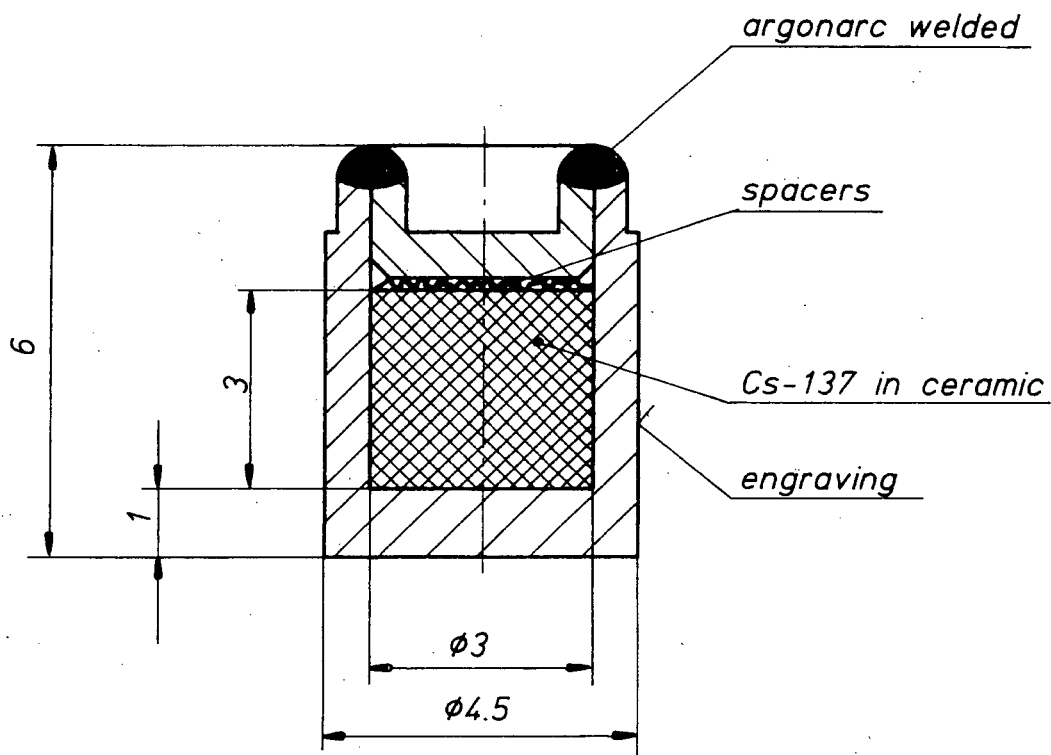
various nuclides				DIN ISO 2768 X m X		Surface	Scale 10:1	stainless steel		
				Date	Name	GAMMA SOURE				
				Drawn	25.05.2010					DStapper
				Appr.						
				Eckert & Ziegler		VZ-2936-001			Page 1	
				Nuclitec					1 pag.	
E	firm logo	25.05.2010	DST	EDV No. exchange\Zeichnungen\2751-3000\Verkaufszeichnung\VZ2936A.dwg						
Issue	Change	Date	Name	The contents of this drawing and its enclosures are our property. The drawing and its enclosures may not be duplicated without our written approval nor be made accessible to any third party. Any unauthorised usage is unlawful and will be prosecuted. Copyright reserved.						



the active height
depends on the activity

				DIN ISO 2768 — f m —		Surface	Scale 10:1	stainless steel No. 14541	
				Date	Name	Cs-137 GAMMA-SOURCE			
				Drawn 11.12.00	Bu.				
				Appr.					
				AEA TECHNOLOGY		VZ-130/2			Page
a	logo	11.12.00	Bu.	QSA					pag.
Issue	Change	Date	Name	EDV No. E:\01\VZ-130CE					

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*capsule and inactive pellet
supplied by customer*

1988	Date	Name
Drawn:	4.11.	Bu.
Approved:		

Scale: 10:1

Material: *stainless steel*
material No. 316L

Cs-137 GAMMA SOURCE

X7 capsule

Drawing No.: VZ-1145

Amersham Buchler GmbH & Co KG
D-3300 Braunschweig

Amersham

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2.5 Sources for particular applications

Calibrated robust Cs-137 gamma point sources

ISO classification

C.66445

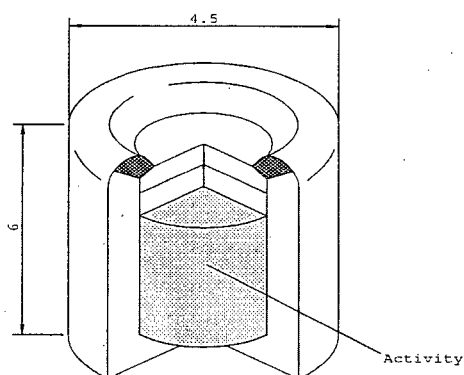
Drawing: VZ-1145

Construction

Cs-137 in the form of a ceramic pellet is welded into a stainless steel capsule. The overall dimensions are 4.5mm diameter x 6mm long.

Certification

Each source is supplied with a Eckert & Ziegler Nuclitec certificate of measurement.



Ordering information

Radionuclide	Nominal activity [kBq]	Product code
Cs-137	37	CDRB5952
Cs-137	370	CDRB5953
Cs-137	3700	CDRB5954

Calibrated robust Cs-137 point sources with thread

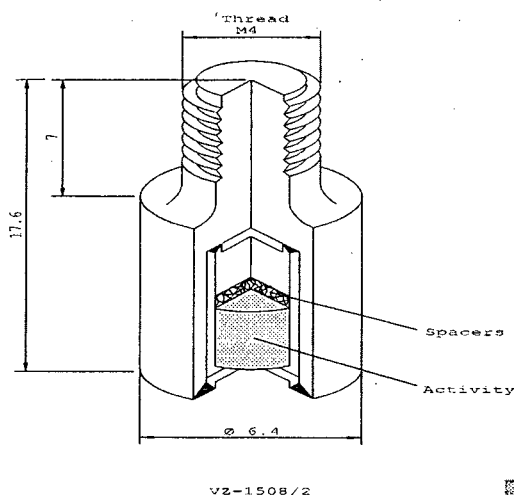
Construction

Cs-137 in the form of a ceramic disc is welded into an inner stainless steel capsule. The inner capsule is mounted into an outer stainless steel capsule which has an M4 thread on the top of the source. The overall dimensions are 6.4mm diameter x 17.6mm.

ISO classification

C.66646

Drawing: VZ-2733

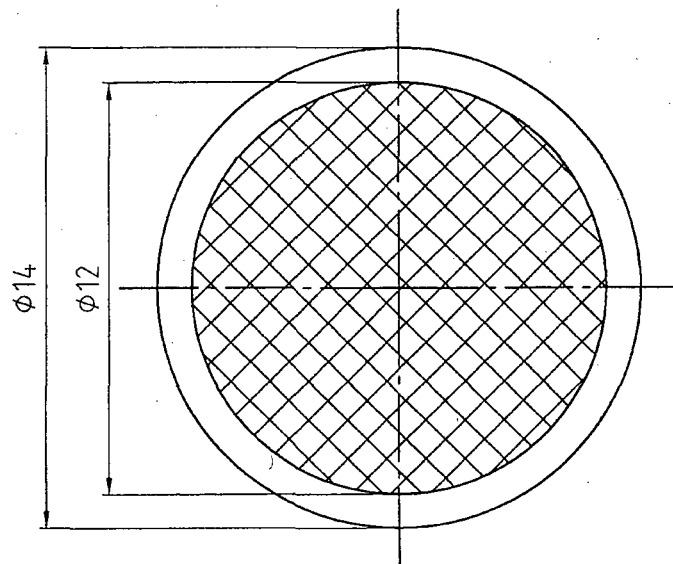
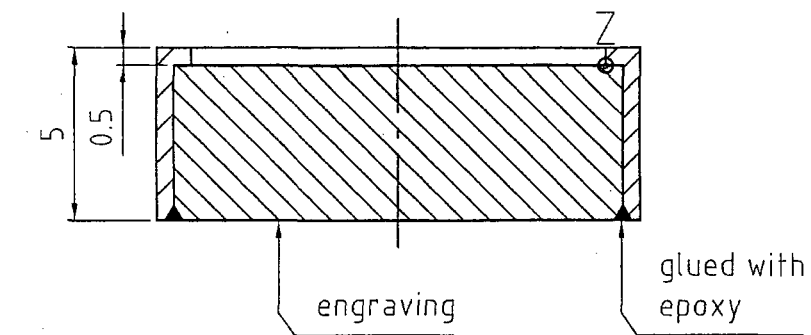


Certification

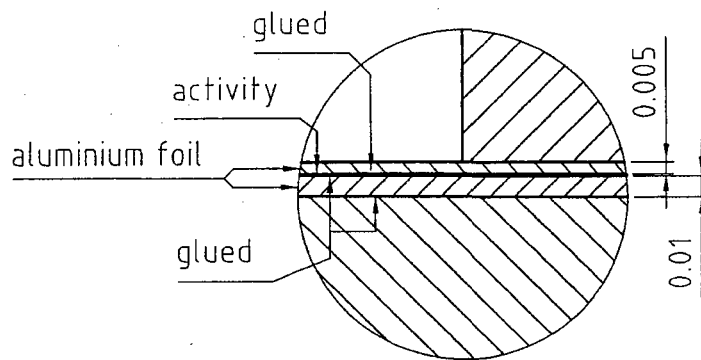
Each source is supplied with a Eckert & Ziegler Nuclitec certificate of measurement.

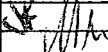

Ordering information

Radionuclide	Nominal activity [kBq]	Product code
Cs-137	37	CDRB5950
Cs-137	370	CDRB3542
Cs-137	3700	CDRB5951

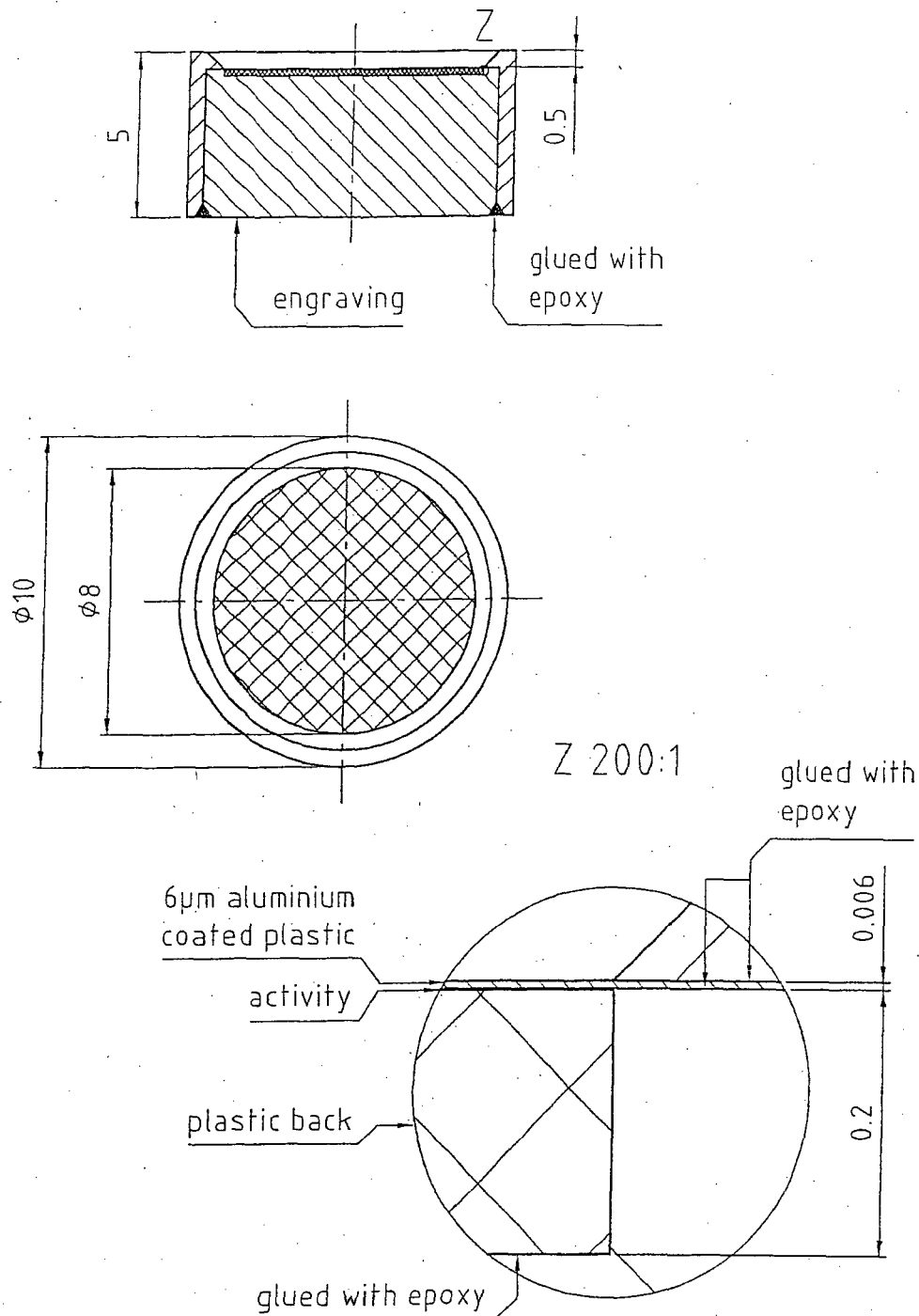


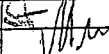

Z 300:1



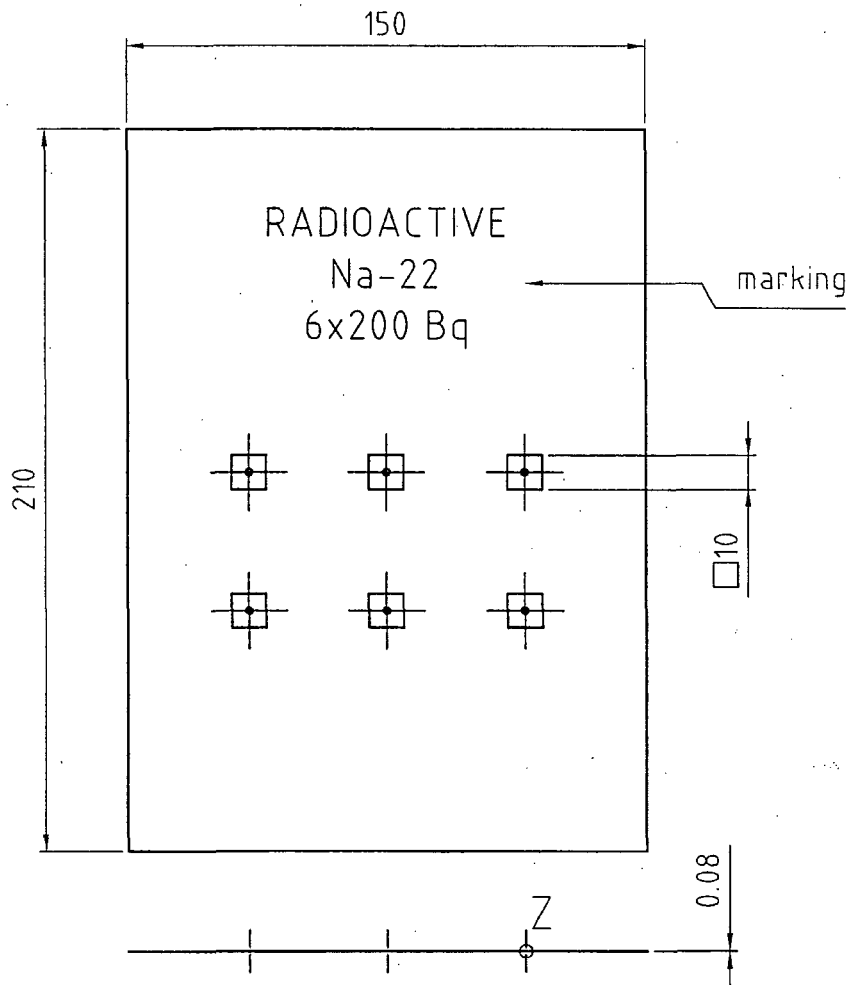
C-14				DIN ISO 2768 f m e		Surface	Scale 5:1	aluminium		
				Date	Name	DUST MONITOR SOURCE				
				Drawn	08.10.2009					DStapper
				Appr.						
						Eckert & Ziegler	VZ-623-002		Page 1	
glossary VZ-3612-00		08.10.2009	DStapper	Nuclitec						
aluminium foil		08.05.2009	DST						1 pag.	
Issue	Change	Date	Name	EDV No. \Zeichnungen\0501-0750\Verkaufszeichnung\VZ623C.dwg						

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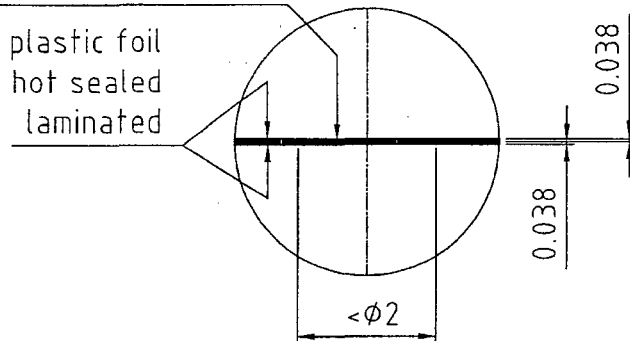


C-14				DIN ISO 2768 X m X		Surface	Scale 5:1	aluminium	
				Date	Name	C-14 SOURCE			
				Drawn 24.06.2010	DStapper				
				Appr.					
				 Eckert & Ziegler		ES-3686-001			Page 1
				Nuclitec					1 pag.
	Dimension	24.06.2010	DST						
Issue	Change	Date	Name	EDV No. exchange\Zeichnungen\3501-3750\Entwicklungszeichnung\ES3686A.dwg					

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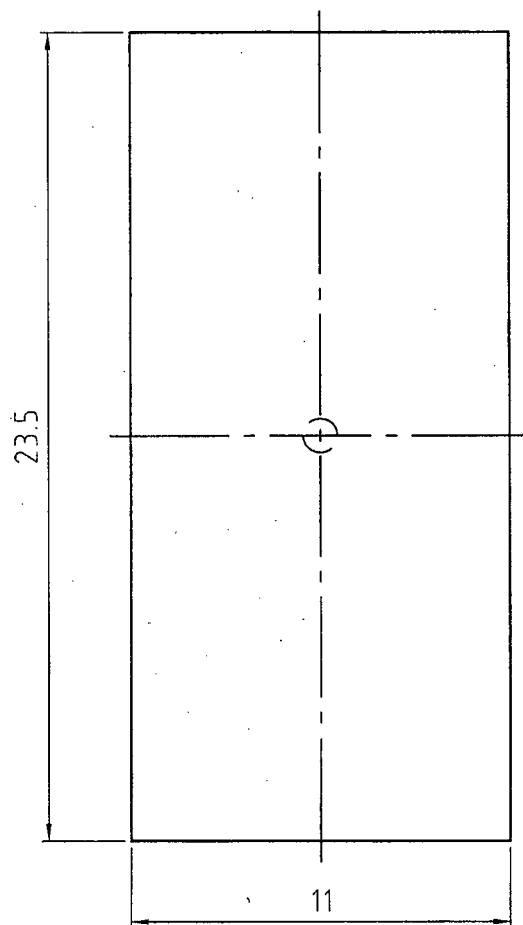
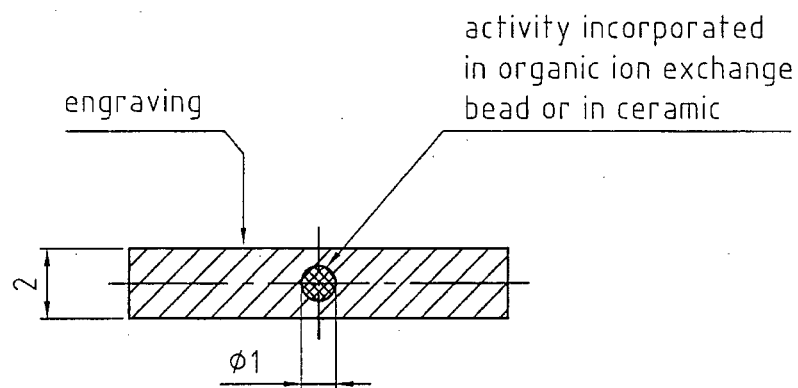



Na-22 as coloured salt Z 10:1
active diameter <2mm



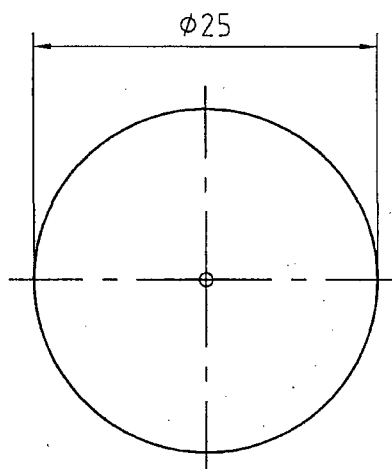
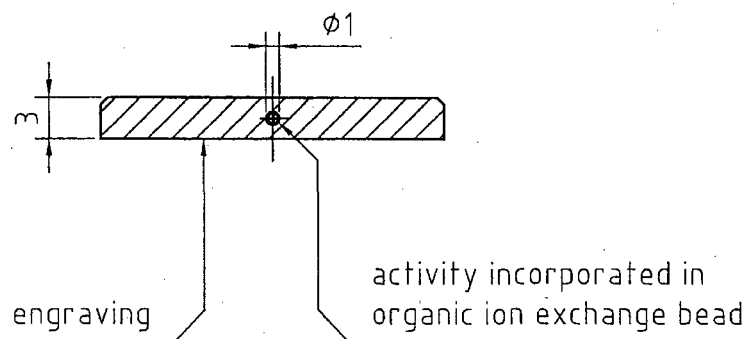
Na-22				DIN ISO 2768 f m c		Surface	Scale 1:2
						plastic	
				Date	Name	Na-22 CHECK SOURCE	
				Drawn	28.07.2009 DStapper		
				Appr.	<i>PT</i>		
				Eckert & Ziegler Nuclitec		VZ-3549-002	Page 1
						1 pag.	
Issue	Change	Date	Name	EDV No. exchange\Zeichnungen\3501-3750\Verkaufszeichnung\VZ3549A.dwg			

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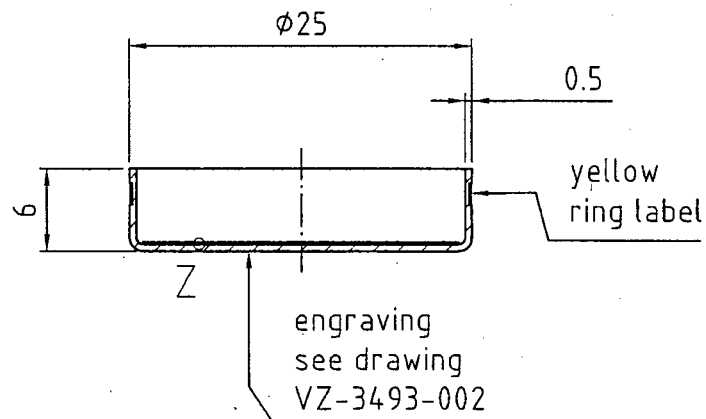
various nuclides				DIN ISO 2768 f m e		Surface		Scale 5:1		acrylic glass	
					Date	Name		GAMMA REFERENCE SOURCE			
				Drawn	18.06.2009	DStapper					
				Appr.		<i>St</i>					
F	firm logo	18.06.2009	DST			Eckert & Ziegler		VZ-1240-001		Page 1	
D	firm logo	24.11.2008	DST			Nuclitec				1 pag.	
BE	VZ-number; firm logo	23.10.2006	DStapper								
Issue	Change	Date	Name	EDV No. 1001-1250\VerkaufsZeichnung\VZ1240\VZ1240G.dwg							

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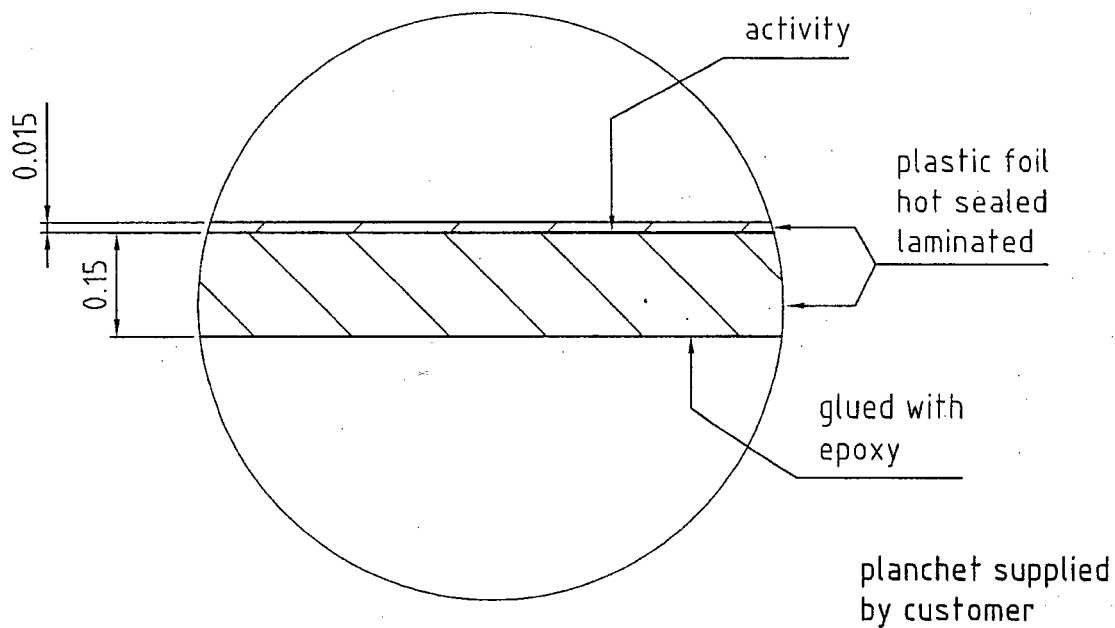


various nuclides				DIN ISO 2768 f m		Surface	Scale 2:1
							plastic
				Date	Name	GAMMA REFERENCE SOURCE	
			Drawn	29.05.2009	DStapper		
			Appr.		<i>Ret</i>		
				Eckert & Ziegler Nuclitec		VZ-477-002	Page 1
F	firm logo	29.05.2009	DST				1 pag.
A	firm logo	27.01.2009	ThD				
Issue	Change	Date	Name	EDV No. \Zeichnungen\0251-0500\Verkaufszeichnung\VZ477\VZ477G.dwg			

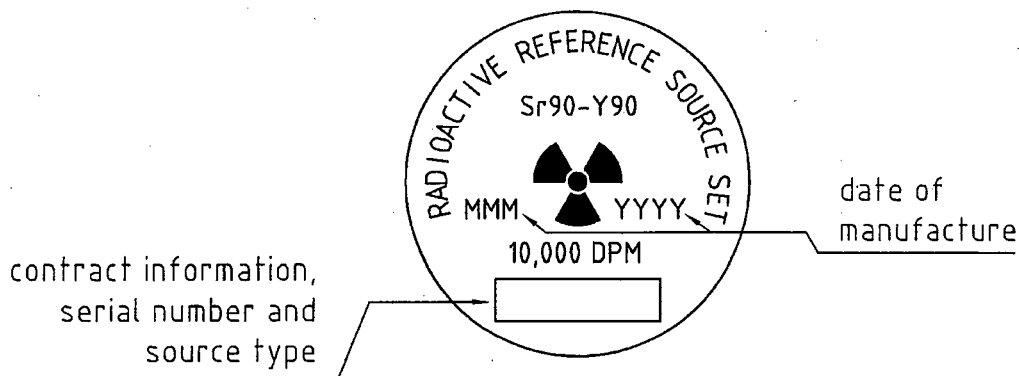
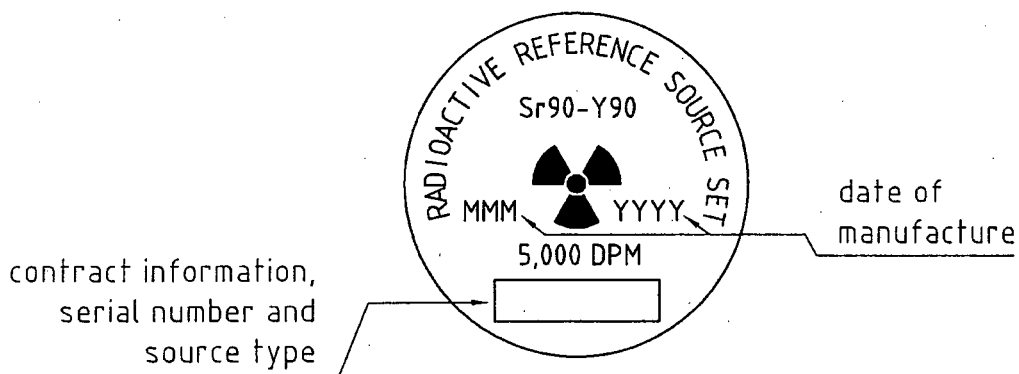
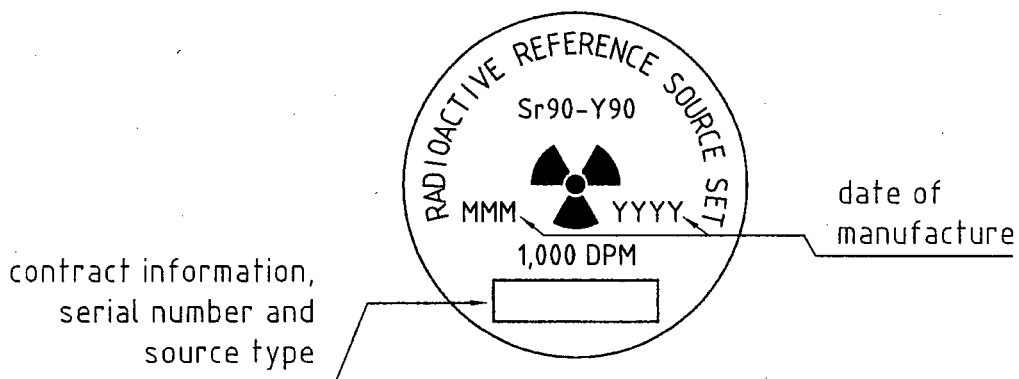
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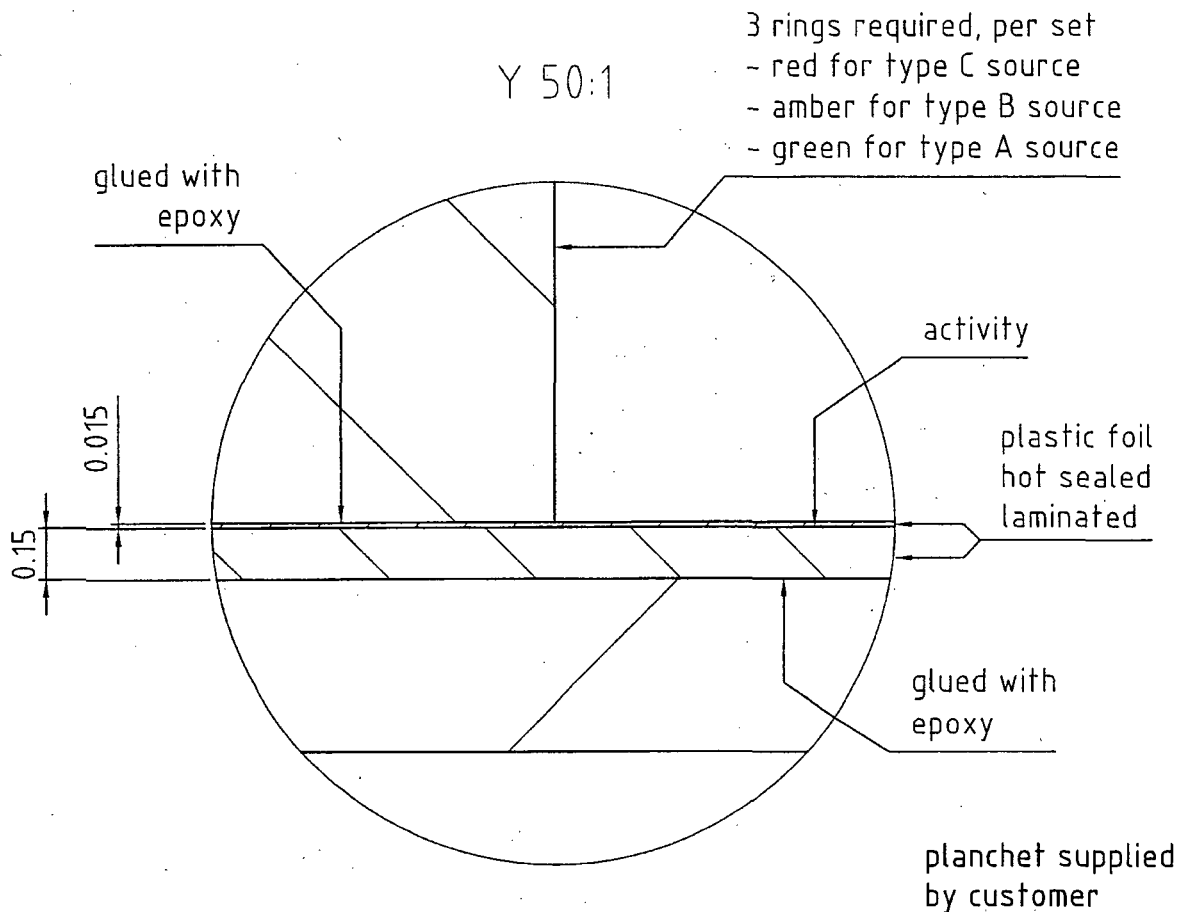
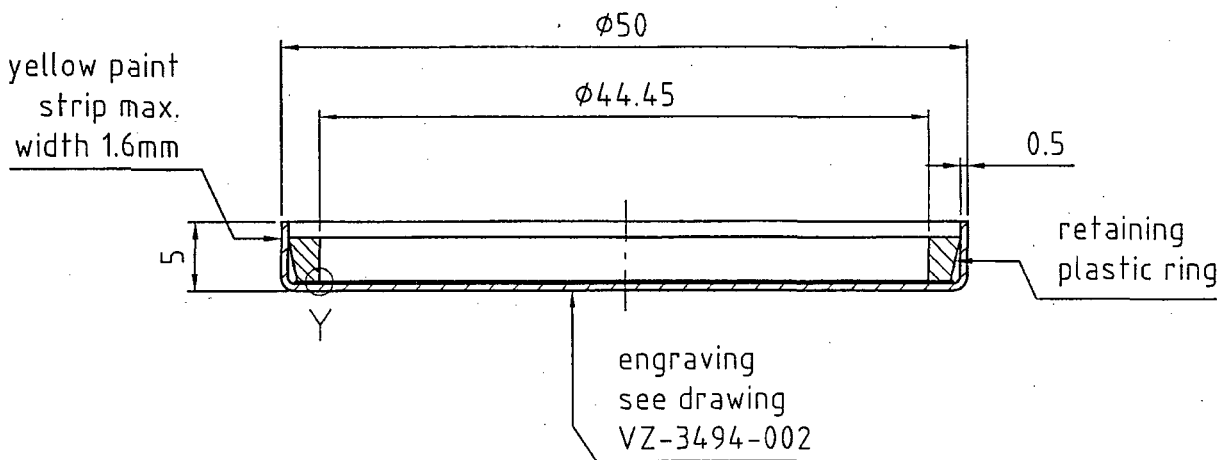
Z 100:1





Sr-90/Y-90				DIN ISO 2768 f m e		Surface	Scale 2:1	stainless steel		
				Date	Name	Sr-90/Y-90 SOURCE STAINLESS STEEL PLANCHET				
				Drawn	14.10.2009					DStapper
				Appr.						
A	firm logo	14.10.2009	DST	Eckert & Ziegler Nuclitec		VZ-3493-001			Page 1	
	yellow ring label	07.09.2007	DStapper						2 pag.	
Issue	Change	Date	Name	EDV No. public\exchange\Zeichnungen\3251-3500\Verkaufszeichnung\VZ3493B.dwg						
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				DIN ISO 2768 f m e		Surface	Scale 2:1
				Date	Name	Sr-90/Y-90 SOURCE STAINLESS STEEL PLANCHET LABEL	
				Drawn 14.10.2009	DStapper		
				Appr.	<i>[Signature]</i>		
				 Eckert & Ziegler Nuclitec		VZ-3493-002	
firm logo		14.10.2009	DST				Page 2
Issue	Change	Date	Name	EDV No. public\exchange\Zeichnungen\3251-3500\Verkaufszeichnung\VZ3493B.dwg			2 pag.
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Sr-90/Y-90				DIN ISO 2768 f m c		Surface	Scale 2:1		aluminium plastic	
					Date	Name	Sr-90/Y-90 SOURCE ALUMINIUM PLANCHET			
				Drawn	17.11.2009	DStapper				
				Appr.		<i>BL</i> <i>[Signature]</i>				
						Eckert & Ziegler		VZ-3494-001		Page 1
B	firm logo	17.11.2009	DST			Nuclitec				2 pag.
yellow strip		27.09.2007	DStapper							
Issue	Change	Date	Name	EDV No. \\Aeant6\CAD Zeichnungen\3251-3500\Verkaufszeichnung\VZ3494C.dwg						

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Administration		11/4/08	
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Approval Signatures and Dates:			
Initiator of Document/Changes:	Manager Responsible	Department:	Quality Assurance:
TK	DM		DM

1.0 Purpose:

To ensure the safe packaging and shipping of radioactive materials in accordance with federal and international regulations and Eckert & Ziegler Analytics' (EZA) Radioactive Materials License.

2.0 Scope:

This procedure covers all radioactive items shipped from Eckert & Ziegler Analytics.

3.0 Safety:

Not Applicable

4.0 Definitions/Acronyms:

Not Applicable

5.0 Equipment/Materials:

- Eberline Ion Chamber
- Ludlum Ion Chamber
- Ludlum Alpha Beta Sample Counter
- 3M clear tape or equivalent
- Plastic pail with lid – 1-, 2-, 3.5- and 5-gallon
- 1 quart cardboard jar with lid
- 1 quart plastic jar with lid
- Fiberboard boxes – various sizes
- 4G Fiberboard boxes – various sizes
- EZA reinforced security tape
- Vermiculite or equivalent
- Wypalls – 6 ½" X 7" or equivalent
- Plastic bubble wrap

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- Blank index cards
- Rubber bands – size 33 or equivalent
- Plastic boxes – various sizes
- Plastic bags – various sizes, 6 mil thickness or equivalent
- Styrofoam peanuts
- Shipping envelope for documents
- Labels – Class 7 Radioactive Material – Category I, II, and III
- Labels – Class 8 Corrosive Material
- Labels – Class 2 Non-Flammable Gas
- Labels – Radioactive Material Excepted Package
- Labels – Dangerous Goods in Excepted Quantities
- Labels – Cargo Only
- Labels – Dangerous goods handling arrows
- Labels – Fragile
- EZA corporate seal

6.0 Flow Chart:

Not Applicable

7.0 Procedure:

7.1 Pre-shipping

- 7.1.1 Check with the quality assurance staff to determine the orders and items to be shipped.
- 7.1.2 Verify that all items and serial numbers are correct, including A's, B's, etc. against the packing list
- 7.1.3 Check all radioactive sources for contamination.
 - 7.1.3.1 Smear the outside of all radioactive source containers using a Whatman filter paper or equivalent with a minimum area of 100cm².

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7.1.3.2 Count the smears in the Ludlum Alpha Beta Sample Counter or equivalent Alpha Beta counter.

7.1.3.3 Document the results of the smear test in the Ludlum Alpha Beta Sample Counter Logbook.

7.1.3.4 If the removable contamination exceeds 400 dpm/100 cm², decontaminate the source, recount, and compare to release criteria. Continue until the release criteria are met or identify the problem to the Quality Assurance (QA) Manager.

7.2 Documentation

Make sure that all documentation is in proper order.

7.2.1 Review the checklist (part of the shipment file) for any special instructions.

7.2.2 Verify the accuracy of all serial numbers on all documentation, labels, and items.

7.2.3 Verify that a radiochemist and the QA Manager sign all of the Certificates of Calibration.

7.2.4 All Certificates of Calibration that are sent to the customer must be crimped with EZA's corporate seal at the bottom of the certificate. Most shipments will have only two Certificates of Calibration per item: one for EZA and one for the customer. If there are more than two, crimp the extras.

7.2.5 If a Certificate of Conformance is sent, the QA Manager must sign it. Keep one copy of the Certificate of Conformance for EZA and send one or more copies to the customer.

7.2.6 Place all Certificates of Calibration, Certificates of Conformance, Certificates of Participation, and any other related documents to be sent to the customer in the envelope provided.

7.2.7 If extra documents are sent, either for the mail or for freight forwarder, place them in the separate envelope provided in the shipment file, then return to the file. If no envelope is provided, review the checklist to determine if they go with the shipment.

7.2.8 Make a notation of the number of Certificates of Calibration sent with the shipment on the packing list and initial it.

7.2.9 For a limited quantity shipment, verify that the radionuclides listed on the EZA

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Shippers Declaration reflect the contents of the shipment, and then sign and date.

7.2.10 If it is a Radioactive I, II, or III; a Corrosive, or Pressurized Gas shipment, a Red Bar Shippers Declaration, which is provided in the file, is required. Make sure to have the person's name on the bottom sign the Shippers Declaration red bar form after verifying that the information listed on the declaration accurately reflect the contents of the shipment.

7.2.11 Additionally for Radioactive II or III shipments, the Transport Index – TI, must be notated on the Shippers Declaration red bar form.

7.2.12 Make sure there is an address label for the box.

7.2.13 Make sure that all labels requiring the QA Manager to initial them are complete.

7.2.14 Photocopy all labels. Stamp the copied page with the number of items shipped. Date and initial it, and place in the shipping folder.

7.3 Labeling Standards

7.3.1 Verify that the serial number on the label and the packing list matches the serial number on the item. If there are any discrepancies, contact the shipping specialist, count room and/or radiochemist.

7.3.2 Place the label on the item in the best-looking and most convenient place available. Place a piece of clear tape on top of the label to protect it.

7.3.3 Liquids (1 mL - 50 mL)

7.3.3.1 Place the label on a bag with clear tape on top of label

7.3.3.2 Place the liquid vial inside and seal the bag.

7.3.4 Liquids (100 mL or more)

7.3.4.1 Place the label on the glass or plastic bottle

7.3.4.2 Put clear tape on top of label.

7.3.5 Cartridges – all types

7.3.5.1 Place clear tape on the round and small rectangle label.

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7.3.5.2 Place the round label on top and the small rectangle label on the side of the cartridge.

7.3.5.3 For small cartridges – place the round label on the plastic box that the cartridge is shipped in and the small rectangle label on the side of the cartridge.

7.3.6 Point Sources or Planchets

7.3.6.1.1 Place the item into the bag.

7.3.6.1.2 Place the bag into a plastic box

7.3.6.1.3 Put the label then clear tape on top of the box.

7.3.7 Mixed Gamma Filters

7.3.7.1 Filter in tape.

7.3.7.1.1 Put clear tape over the round label.

7.3.7.1.2 Center the label over the active side of the filter.

7.3.7.1.3 Cut out the filter.

7.3.7.2 Filter in a petri dish.

7.3.7.2.1 Put clear tape on the round label.

7.3.7.2.2 Place the label on top of the petri dish.

7.3.8 33 mL Spheres

7.3.8.1 Take the label and place it on a blank index card.

7.3.8.2 Put clear tape on both sides of the index card.

7.3.8.3 Punch a hole in the corner of the card and loop a rubber band through the hole and attach to the gas sphere.

7.3.9 Special or Unusual Items

Ask the Shipping Department for guidance.

7.4 Types of Shipments (Review IATA Instructions for shipping Dangerous Goods)

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7.4.1 Hazardous Material with Red Bar Shippers Declaration Form:

7.4.1.1 Class 7 - Radioactive I, II, or III

7.4.1.2 Class 8 - Corrosive

7.4.1.3 Class 2.2 - Non-flammable Pressurized Gas

7.4.2 Small Quantities:

7.4.2.1 Limited Quantity, Excepted package of Radioactive Material

7.4.2.2 Excepted Quantities of Corrosive Material

7.5 Packaging

7.5.1 Limited Quantity, Excepted Package of Radioactive Material and/or Excepted Quantity of Corrosive Material

7.5.1.1 Once all items are labeled, place each item inside an individual plastic bag and seal the bag.

7.5.1.2 Package the item according to the types as shown below:

7.5.1.2.1 Liquids of 1 mL - 50 mL

7.5.1.2.1.1 Wrap the liquids in 3 Wypalls (or equivalent).

7.5.1.2.1.2 Depending on the number of items/vials shipped, place the vials inside a 1-quart plastic jar or a 1-, 2-, 3.5-, or 5-gallon plastic pail

7.5.1.2.1.3 Seal the lid to the pail.

7.5.1.2.2 Liquids greater than 50 mL

7.5.1.2.2.1 Place the liquids into a 1-, 2-, 3.5-, or 5-gallon plastic pail with vermiculite or other absorbent material surrounding it.

7.5.1.2.2.2 Seal the lid on the pail.

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7.5.1.2.3 33 ml gas spheres

7.5.1.2.3.1 Wrap the sphere(s) in bubble wrap.

7.5.1.2.3.2 Place the sphere(s) inside a 1-quart cardboard jar.

7.5.1.2.4 Glass items

Wrap in bubble wrap to insure against breakage.

7.5.1.2.5 Small or fragile items

Place the items into plastic boxes.

7.5.1.3 Put all small items in the shipment in a larger bag together to ensure that no items are lost.

7.5.1.4 Place higher activity items toward the center of the container.

7.5.1.5 Count the items to verify that all items are included in the shipment.

7.5.1.6 Make sure that all items are packed securely and do not shift in any way during transport.

7.5.1.7 Surround the items with styrofoam peanuts.

7.5.1.8 Place the envelope containing the shipping documents inside the box.

7.5.1.9 Fold flap of box together and put yellow radioactive material sticker on top of flap before closing the box.

7.5.1.10 Seal the outer box with EZA security tape.

7.5.1.11 Place the address label on top of the box and cover the label with clear tape.

7.5.2 Class 7 Radioactive Type A Package: Category I, II, and III

Review the Red Bar Shipper's Declaration prior to packing

Review the EZA Type A Certification Report

7.5.2.1 Package the item according to the item types as shown below:

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7.5.2.1.1 Liquids of 1 mL - 50 mL
Wrap in 3 Wypalls or equivalent.

7.5.2.1.2 Liquids greater than 50 mL
Surround the liquids with vermiculite in the pail.

7.5.2.1.3 33 mL gas spheres
Wrap the gas spheres in bubble wrap.

7.5.2.1.4 Glass items
Wrap glass items in bubble wrap.

7.5.2.1.5 Small and fragile items
Place these items in plastic boxes.

7.5.2.2 Count the items to make sure that all items are in the shipment.

7.5.2.3 Place all items inside a plastic bag and seal the bag.

7.5.2.4 Place the items in a plastic pail. Surround them with Styrofoam peanuts or vermiculite

7.5.2.5 Seal the lid on the pail.

7.5.2.6 Package in accordance to EZA's Type A Certification Report.

7.5.3 Class 8 Corrosive

7.5.3.1 Review the Red Bar Shipper's Declaration prior to packing.

7.5.3.2 Refer to the current IATA regulations to determine the proper shipping name of the corrosive material.

7.5.3.3 Review the packing instructions for that particular corrosive, fiberboard box or 4G type packaging.

7.5.3.3.1 If the packing instructions contain a "Y" before the number such as Y808, Y818, etc., the plastic pail containing the liquids may be packed in a normal fiberboard box.

7.5.3.3.2 Otherwise, the plastic pail must be packed in the appropriate "4G" type packaging.

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7.5.3.4 Package the item according to the item types as shown below:

7.5.3.4.1 Liquids of 1 mL - 50 mL

Wrap in 3 Wypalls or equivalent.

7.5.3.4.2 Liquids greater than 50 mL

Surround the liquids with vermiculite in the plastic pail.

7.5.3.4.3 33 mL gas spheres

Wrap the gas spheres in bubble wrap.

7.5.3.4.4 Glass items

Wrap glass items in bubble wrap.

7.5.3.4.5 Small and fragile items

Place these items in plastic boxes.

7.5.3.5 Count the items to make sure that all items are in the shipment.

7.5.3.6 Place all items inside a plastic bag and seal the bag.

7.5.3.7 Place the items in a plastic pail. Surround them with Styrofoam peanuts or vermiculite

7.5.3.8 Seal the lid on the pail.

7.5.4 Class 2.2 Non-Flammable Pressurized Gas

Review the Red Bar Shipper's Declaration prior to packing

7.5.4.1 Use the current IATA regulations to determine the proper shipping name for the non-flammable pressurized gas.

7.5.4.2 Review and pack in accordance with the packing instructions for that proper shipping name.

NOTE: All cylinder valves must be protected from damage during shipment.

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7.5.5 Combinations of packing:

1 st Priority	2 nd Priority	Ship As
Class 7 Radioactive I, II, or III	Excepted quantity of corrosive	Class 7 Radioactive I, II or III
Class 7 Radioactive I, II, or III	Class 8 Corrosive	Class 7 Radioactive I, II or III with subsidiary risk Class 8
Class 8 Corrosive	Limited quantity, excepted package radioactive material	Class 8 Corrosive
Class 2.2 Non-flammable Pressurized Gas	Limited quantity, excepted package radioactive material	Class 2.2 Non-flammable Pressurized Gas
Class 2.2 and Class 8	-----	Ship separately
Excepted Quantity of Corrosive and Limited quantity, excepted package radioactive material	-----	Excepted Quantity of Corrosive and Limited quantity, excepted package radioactive material

NOTE: Radioactive I, II, or III always takes priority over any excepted package shipment.

7.5.6 Limits Table

7.5.6.1 The maximum surface dose and transport index are listed below and are based upon current 49 CFR and IATA regulations.

7.5.6.1.1 To determine the maximum surface dose, using the Eberline Ion Chamber or the Ludlum Ion Chamber on the lowest setting, meter the outside of the package on all sides of the package to determine the maximum radiation level in millirem per hour.

7.5.6.1.2 Using the Limits Table below, determine the category into which the shipment falls. If the radiation level is < 0.5 mrem/hr, and the quantity of radioactive material is too high for Limited Quantity, the shipment must be shipped Radioactive I.

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Maximum Surface Dose:

Limited Quantity < 0.5 mrem/hr
Radioactive I < 0.5 mrem/hr
Radioactive II 0.5 mrem/hr - 50 mrem/hr
Radioactive III 50 mrem/hr - 200 mrem/hr

7.5.6.1.3 Record the dose rate in the Ludlum Alpha Beta Sample Counter Logbook.

7.5.6.1.4 To determine the transport index using the Eberline Ion Chamber or the Ludlum Ion Chamber on the lowest setting, meter the box at one meter (3.3 feet) from the external surface of the package to determine the maximum radiation level in millirem per hour.

Transport Index-(T.I.):

Radioactive I 0
Radioactive II T.I. < 1.0 mrem/hr
Radioactive III 1.0 mrem/hr - < 10 mrem/hr

7.6 Labeling and Marking the Package

7.6.1 Radioactive Excepted Package, Limited Quantity Shipments

7.6.1.1 Place the following labels on outside of box:

7.6.1.1.1 FRAGILE

7.6.1.1.2 One (1) "Radioactive Material, Excepted Package UN2910" label on top of the box.

7.6.1.2 Fold and place the packing list and Shipper's Declaration inside a shipping pouch and place the pouch on the side of the box.

7.6.2 Class 7 – Radioactive I, II, or III shipments:

7.6.2.1 Place the following labels on outside of box (must be affixed to two opposite sides of the box):

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7.6.2.1.1 CLASS 7 RADIOACTIVE I, II, or III

7.6.2.1.2 CARGO ONLY

7.6.2.1.3 Dangerous Goods Handling Arrows

7.6.2.2 Markings per the Red Bar Shipper's Declaration Form (must be marked on two opposite sides of the box)

7.6.2.2.1 UN Number

7.6.2.2.2 Proper Shipping Name

7.6.2.2.3 Type 'A' certification

7.6.2.3 Fill in the isotopes and activities on the "RADIOACTIVE I" labels.

7.6.2.4 Fill in the transport index, isotopes, and activities on the "RADIOACTIVE II and III" labels.

7.6.2.5 Fill in the transport index, air bill number, and the dimensions of the box. Verify that the bottom is signed on the Shippers Declaration Red Bar form. Any changes or mistakes on the Shippers Declaration must be signed (not initialed) and dated by the person who signed the bottom of the form.

7.6.2.6 Fold and place the packing list in a shipping pouch on the side of the box.

7.6.2.7 Put the Shipper's Declaration red bar form in a separate shipping pouch on the other side of the box.

7.6.3 Excepted Quantity of Corrosive Material Shipments

7.6.3.1 Place the following labels on outside of box:

7.6.3.1.1 Signed "Corrosive" label on top of box

7.6.3.1.2 FRAGILE

7.6.3.2 Fold and place the packing list and Shipper's Declaration in a shipping pouch on the side of the box.

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7.6.4 Class 8 – Corrosive

7.6.4.1 Place the following labels on outside of box (one label per box required):

7.6.4.1.1 CLASS 8 CORROSIVE

7.6.4.1.2 CARGO ONLY (if applicable to the Red Bar Shipper's Declaration)

7.6.4.1.3 Dangerous goods Handling Arrows

7.6.4.2 Markings per the Red Bar Shipper's Declaration

7.6.4.2.1 UN Number

7.6.4.2.2 Proper Shipping Name

7.6.4.2.3 For "Y" packing instructions that are not required to be shipped in a '4G' container, the box MUST be marked "Limited Quantity" or "LTD QTY"

7.6.4.3 Make sure the bottom is signed on the Shipper's Declaration Red Bar form. Any changes or mistakes on the Shipper's Declaration must be signed (not initialed) and dated by the person who signed the bottom of the form.

7.6.4.4 Fold and place the packing list and Shippers Declaration in a shipping pouch on the side of the box.

7.6.4.5 Place the Red Bar Shipper's Declaration in separate pouch on the other side of box.

7.6.5 Class 2.2 – Non-Flammable Pressurized Gas

7.6.5.1 Place the following labels on outside of the box (one set of labels per box is required):

7.6.5.1.1 CLASS 2 NON-FLAMMABLE GAS

7.6.5.1.2 CARGO ONLY (if applicable to the Red Bar Shipper's Declaration)

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7.6.5.1.3 Dangerous Goods Handling Arrows

7.6.5.2 Markings per the Red Bar Shipper's Declaration

7.6.5.2.1 UN Number

7.6.5.2.2 Proper Shipping Name

7.6.5.3 Make sure to sign at the bottom of the Shipper's Declaration Red Bar form. Any changes or mistakes on the Shipper's Declaration must be signed (not initialed) and dated by the person who signed the form.

7.6.5.4 Fold and place packing list in a shippers pouch on side of box.

7.6.5.5 Place the Red Bar Shipper Declaration in a separate pouch on the other side of box.

7.6.6 If you have a Radioactive I, II or III with a second hazard Class 8, the second hazard is a subsidiary risk of the radioactive hazard.

7.6.6.1 Place the following labels on outside of the box (2 sets of labels are required per box):

7.6.6.1.1 CLASS 7, RADIOACTIVE I, II, OR III

7.6.6.1.2 CARGO ONLY

7.6.6.1.3 Dangerous Goods Handling Arrows

7.6.6.1.4 Class 8 Corrosive

7.6.6.2 Markings per the Red Bar Shipper's Declaration:

7.6.6.2.1 UN Number

7.6.6.2.2 Proper Shipping Name

7.6.6.2.3 Type 'A' Certification

7.7 Visually inspect all shipments for errors.

7.8 Contamination check for all Radioactive Packages

7.8.1 Smear the outside of all radioactive packages with a Whatman filter paper or equivalent, a minimum area of 100cm²

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- 7.8.2 Count smears in the Ludlum Alpha Beta Sample Counter or equivalent Alpha Beta counter.
- 7.8.3 Document results of the smear test in the Ludlum Alpha Beta Sample Counter logbook
- 7.8.4 If removable contamination exceeds 400dpm/100cm², recount, and compare to release criteria. If the recounts exceed the release criteria identify the problem to the QA Manager or RSO before shipping the package.

8.0 Reference(s):

- International Air Transport Association (IATA) Dangerous Goods Regulations
- NRC Regulation 10 CFR 71, "Packaging and Transportation of Radioactive Material"
- NRC Regulation 49 CFR 100-185, "The Hazardous Materials Regulations"
- Georgia Department of Natural Resources Rules and Regulations for Radioactive Material, Chapter 391-3-17
- Eckert & Ziegler Analytics Radioactive Materials License
- Eckert & Ziegler Analytics Quality Assurance Manual

9.0 Revision History:

Revision:	Effective Date:	Description of Change:	Submitted/ Approved By:
7	11/4/08	Updated procedure and changed to new format	TK

10.0 Appendices:

Not Applicable

11.0 Forms:

Ludlum Alpha Beta Sample Counter logbook

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