



**Eckert & Ziegler**  
Isotope Products

**Medical Imaging Laboratory**

24937 Avenue Tibbitts Valencia, California 91355  
Tel 661-309-1010 Fax 661-257-8303

**Industrial Gauging and Medical Imaging Laboratory**

1800 North Keystone Street Burbank, California 91504  
Tel 661-309-1010 Fax 661-257-8303

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## NOMINAL SOURCE DATA SHEET

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**CATALOG No.:** PP-057-100U

**NUCLIDE:** Co-57

**ACTIVITY:** 100  $\mu$ Ci

**ACTIVITY:** 3.7 MBq

**SOURCE No.:** M1-272

**QUANTITY:** 1

**REFERENCE DATE:** 1 Feb 15

**CAPSULE:** Pen point marker, IPL Drawing #1915

**ACTIVE AREA:** 0.030" diameter

**BACKING:** Aluminum

**COVER:** Aluminum

**NATURE OF ACTIVE DEPOSIT:** Co-57 dispersed in resin matrix.

**LEAK TEST INFORMATION IS ON THE REVERSE SIDE.**

**IMPURITIES:** Co-56 = 0.00202%; Co-58 = 0.00040% on 1 Feb 15

**REMARKS:** 1) Brass holder covers the active point for shielding. Twist the handle to remove marker from brass holder.  
2) ISO 2919:1999 Classification: ISO/99/C22212.

**LAB BOOK-PAGE:** 1792-5

 | 1-Dec-14  
SIGNATURE | DATE

ISO 13485 CERTIFIED



**Authorized Representative**

Eckert & Ziegler Nuclitec GmbH Gieselweg 1 38110 Braunschweig Germany  
Tel: +49 (0) 5307 9320 Fax: +49 (0) 5307 932 293





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# NOMINAL SOURCE CERTIFICATE

**Model Number:** PF24RW-057-20M  
**Quantity:** 1  
**Capsule Type:** EZIP drawing #3515  
**Active Region:** 610 mm x 445 mm (24.0" x 17.5")  
**Type of Active Element:** Co-57 dispersed in resin matrix  
**Cover:** Vinyl backed nylon  
**Backing:** Vinyl backed nylon  
**Nuclide Half Life:** 271.79 ± 0.09 days  
**SS&DR Number:** CA0406S180S  
**ISO Classification:** ISO/99/C22414  
**Special Form Number:** Not applicable  
**Recommended Replacement Date:** 1-Sep-14

Nuclide	Serial Number	Activity		Reference Date
Co-57	1645-172	20 mCi	740 MBq	1-Mar-13

### Source Field Uniformity Measurement:

Source uniformity measurement of the 122/136 keV gamma emission was performed using a gamma camera scanning system. An array of "unit cells" was measured to calculate the uniformity data shown below.

Unit Cell Area:	0.91 cm <sup>2</sup>	Integral Non-Uniformity (INU):	2.22%
Coefficient of Variation:	0.63%	Differential Non-Uniformity (DNU):	1.45%

**Impurities:** Co-56 and Co-58 combined is < 0.12% on 1-Mar-13

**Leak Test Information is on the Reverse Side.**

- Remarks:**
- This document uses the numerical convention where 1.000 = 1 and 1,000 = 10<sup>3</sup>.
  - Nuclear data were taken from IAEA-TECDOC-619, 1991.
  - U.S. Patent #7,233,012
  - Coefficient of Variation: The standard deviation of the distribution of the measured values by the mean of measured values.
  - Integral Non-Uniformity: (Max - Min)/(Max + Min), where Max represents the largest measurement and Min represents the smallest measurement in the useful region.
  - Differential Non-Uniformity: (Max - Min)/(Max + Min) represents the largest deviation between a central value and the eight surrounding measurements.

*Christina Boyer*

18-Jan-13

Signature

Date

Lab Book-Page: 1611-147

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