



Sample Containers for Gamma Spectrometry

Marinelli Beaker sample containers are used in gamma spectrometry to maximize the efficiency of measurement systems when the radioactivity of the sample material is low and the limits of detection require special geometries.





Eckert & Ziegler Marinelli Beakers provide great counting efficiency for liquid and solid materials by arranging the sample material close to the detector. The beakers are constructed from polypropylene and are resistant to acids and most organic solvents.

Eckert & Ziegler's Marinelli Beakers are available with innovative screw-on lids or traditional snap-on lids. The patented, tight sealing lids have an integrated handle for easy transfer of the beaker in and out of the detector shielding.

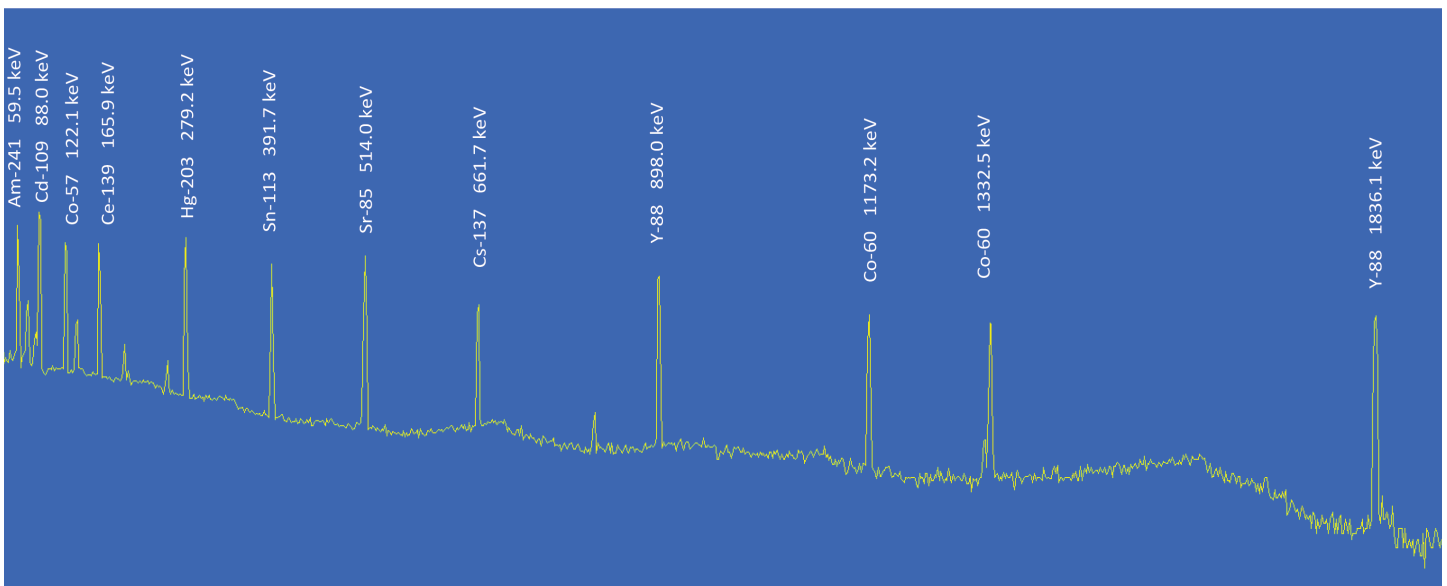


The screw-on lid version is recommended for liquids, preventing contamination by spillage of solutions. The lid has an integrated sealing ring, assuring a leak proof operation. A special tool kit is available for pressure tight seal of the beaker, maintaining a seal up to 10 psi (70kPa).



Every Marinelli Beaker is labeled with a barcode containing a unique serial number for easy sample identification.

Typical Gamma Spectrum for a radionuclide mixture in a Marinelli Beaker



500 ml Marinelli Beaker Screw-On Type



E&Z Part Number 500 ml Screw-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Calibration Efficiency Equivalent to
MB500-92-119SL	90 mm (3.54")	92 mm	76 mm	119 mm	142 mm	590G-E

- Use Tool Kit MB500-TOOL-142 for this beaker
- Package size: 36 Beakers per case including lids.
- Minimum order quantity: 5 beakers

1-Liter Marinelli Beaker Screw-On Type



E&Z Part Number 1-Liter Screw-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Calibration Efficiency Equivalent to
MB1-78-180SL	76.2 mm (3.00")	77 mm	76 mm	178 mm	142 mm	130GWMTJ
MB1-97-150SL	95 mm (3.75")	97 mm	76 mm	150 mm	142 mm	138G-E

- Use Tool Kit MB1-TOOL-142 for these beakers
- Package size: 36 Beakers per case including lids.
- Minimum order quantity: 5 beakers

1-Liter Marinelli Beaker Screw-On Type



E&Z Part Number 1-Liter Screw-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Calibration Efficiency Equivalent to
MB1-85-130SL	82.5 mm (3.25")	84.7mm	72mm	130mm	164mm	132G-E

- This Marinelli Beaker provides a better counting efficiency than MB1-85-156L. The measurement geometry for this beaker has been optimized and sample material filled in this beaker is more uniformly positioned around the detector.
- Use Tool Kit MB1-TOOL-164 for this beaker
- Package size: 36 Beakers per case including lids.
- Minimum order quantity: 5 beakers

5.4-Liter Marinelli Beaker Screw-On Type



E&Z Part Number 5.4-Liter Screw-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)
MB5-113-188SL	110 mm (4.25")	113	104	188	254

- This is the largest Marinelli Beaker available. The beakers has volume marks for fillings heights of 4 liter and 5.4 liter.
- Use Tool Kit MB1-TOOL-254 for this beaker
- Package size: 36 Beakers per case including lids.
- Minimum order quantity: 5 beakers

Tool Kits for Screw-On Lid Type Marinelli Beakers



- By using one of the available tool kits, the lid interlocks with the beaker ensuring a leak tight seal for liquids.

Screw-On Lid Type Beaker	Tool Kit Part Number
MB500-92-119SL	MB500-TOOL-142
MB1-78-180SL	MB1-TOOL-142
MB1-97-150SL	MB1-TOOL-142
MB1-85-130SL	MB1-TOOL-164
MB5-113-188SL	MB5-Tool-254

Usage Instructions

- Tighten the lid by hand and position the beaker into the hand vice as shown in photo.
- Grasp the two prongs and squeeze them together.
- Place the handle over the lid grooves and turn the lid 1/4 turn (90 degrees) to fully seat the lid in place.



500 ml Marinelli Beaker Snap-On Type



E&Z Part Number 500 ml Snap-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Calibration Efficiency Equivalent to
MB500-85-117L	82.5 mm (3.25")	83.5 mm	76 mm	117 mm	133 mm	533N-E
MB500-92-116L	90 mm (3.54")	92 mm	76 mm	116 mm	133 mm	590G-E

- Package size: 36 Beakers per case including lids.
- Minimum order quantity: 5 beakers

1-Liter Marinelli Beaker Snap-On Type



E&Z Part Number 1-Liter Snap-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Calibration Efficiency Equivalent to
MB1-85-156L	82.5 mm (3.25")	85 mm	76 mm	156 mm	133 mm	133N-E

- Package size: 36 Beakers per case including lids.
- Minimum order quantity: 5 beakers

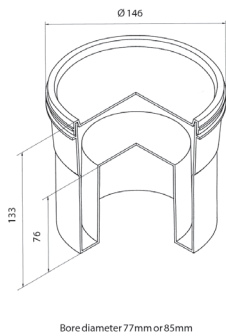
1-Liter Marinelli Beaker Snap-On Type



E&Z Part Number 1-Liter Snap-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Calibration Efficiency Equivalent to
MB1-85-130L	82.5 mm (3.25")	84.7 mm	72 mm	129 mm	175 mm	132G-E

- This Marinelli Beaker provides a better counting efficiency than MB1-85-156L.
- The measurement geometry for this beaker has been optimized and sample material filled in this beaker is more uniformly positioned around the detector.
- Package size: 36 Beakers per case including lids.
- Minimum order quantity: 5 beakers

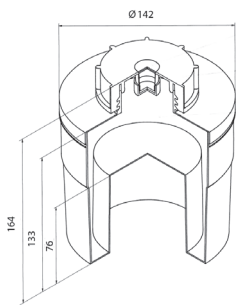
1-Liter Marinelli Beaker Snap-On Type



Bore diameter 77mm or 85mm

E&Z Part Number 1-Liter Snap-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Drawing
NQB1245	82.5 mm (3.25")	85 mm	76 mm	133 mm	146 mm	VZ-1262
MB1-97-150SL	95 mm (3.75")	97 mm	76 mm	150 mm	142 mm	VZ-1262

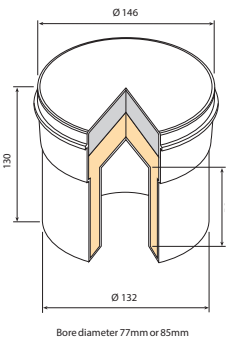
1-Liter Marinelli Beaker Screw-On Type



Bore diameter 85mm

E&Z Part Number 1-Liter Screw-On Beaker	Detector Endcap Diameter	Beaker Well Diameter	Beaker Well Height	Beaker Height (with Lid)	Beaker Diameter (with Lid)	Drawing
NQB2205	82.5 mm (3.25")	85 mm	76 mm	164 mm	142 mm	VZ-1520

Ra-226 and Th-232 Reference Sources in 1-Liter Marinelli Beaker Geometry



Bore diameter 77mm or 85mm

E&Z Part Number	Nuclide	Beaker Model	Nominal Activity	Density of Matrix	Drawing
CDRB1249	Cs-137	NQB1245	5 kBq	0.97 g/cm ³	VZ-1520
TYRB1250	Th-232 in equilibrium with Th-228	NQB1245	1 kBq	1.15 g/cm ³	VZ-1520
RARB1414	Ra-226	NQB1245	3kBq	1.15 g/cm ³	VZ-1520

The radioactive material is homogeneously incorporated in a special water-equivalent matrix. The matrix has a density of 0.97g/cm³ for Cs-137, but for Ra-226 and Th-232/Th228 the density is 1.15g/cm³.

E&Z Part Number	Calibration efficiency equivalent	Nominal Beaker Volume	Detector Endcap Ø		Beaker Well Diameter	Beaker Well Height	Beaker Height with Lid	Beaker Diameter with Lid	Lid Type
			liter	Ø inch					
MB500-85-117L	533N-E	0.5	3.25	82.5	83.5	76	117	133	Snap-On
MB500-92-116L	Similar 590G-E	0.5	3.54	90	92	76	116	133	Snap-On
MB1-85-156L	133N-E	1	3.25	82.5	85	76	156	133	Snap-On
MB1-85-130L	132G-E	1	3.25	82.5	85	72	129	175	Snap-On
MB500-92-119SL	Similar 590G-E	0.5	3.54	90	92	76	119	142	Screw-On
MB1-78-180SL	130G-E	1	3.00	76.2	77	76	178	142	Screw-On
MB1-85-130SL	132G-E	1	3.25	82.5	85	72	130	164	Screw-On
MB1-92-150SL	190G-E	1	3.54	90	92	76	150	142	Screw-On
MB1-97-150SL	138G-E	1	3.75	95	97	76	150	142	Screw-On
MB5-113-188SL	n/a	5.4	4.25	110	113	104	188	254	Screw-On
NQ7013	n/a	1		76.2	77	76	133	146	Snap-On
NQB1245	n/a	1		82.5	85	76	133	146	Snap-On
NQB2205	n/a	1		82.5	85	76	164	142	Screw-On



Eckert & Ziegler manufactures a wide range of Reference Sources in Marinelli Beaker Geometries. The use of solid, sealed sources for detector calibration minimizes contamination risks and avoids calibration errors caused by incorrect handling of radioactive solutions.

These reference sources are available with single or mixed nuclides homogeneously incorporated into various matrix materials, matching closely the sample material to be measured. Reference sources can be prepared with a wide range of densities from gas equivalent (0.02 g/cm^3) to cement (approx. 3 g/cm^3).

We offer commonly used beakers or bottles for these type sources, but can use your own containers too, meeting your special requirements.

For details please contact your local Eckert & Ziegler Isotrak Customer Service Team, local distributor or the Isotrak pages on our web site: www.ezag.com.

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