

# Zirconium-89 (<sup>89</sup>Zr)



Zirconium-89 is employed in specialized applications using PET imaging, for example, with <sup>89</sup>Zr-labeled antibodies (immuno-PET). Proteins and antibodies can be easily labelled with <sup>89</sup>Zr using off-the-shelf chelates and subsequently applied in preclinical and clinical immuno-PET settings. We have been successfully producing GMP-compliant <sup>89</sup>Zr for the research community since 2003.

## Product specifications

Zirconium-89 ( <sup>89</sup> Zr)
>740 MBq/ml at calibration time and date
GMP compliant
Store product at room temperature
Expiry date is 10 days after calibration time
pH <4
Radionuclidic purity ≥ 99.9%
Half-life: 78.41 h



✓ **AVAILABILITY:**  
Monday and Thursday

✓ **CALIBRATION:**  
Thursday 6:00 pm CET  
for production on Monday  
Monday 6:00 pm CET  
for production on Thursday

✓ **PACKAGING:**  
2 ml clear NENSure v-vial with glass insert

✓ **ORDERING:**  
Revvity

## Physical Data

Rad. Type	Energy (keV)	Radiation Intensity (%)
B+	395.5	22.74
E-AU-L	1.91	79
E-AU-K	12.7	19.47
G-AN	511	45.48
G	909.15	99.04
G	1620.8	0.073
G	1657.3	0.106
G	1713	0.745
G	1744.5	0.123

## Decay Table

Physical half-life: 78.41 hours

Hours	0	1	2	3	4	5	6	7	8	9
0	1.000	0.991	0.982	0.974	0.965	0.957	0.948	0.940	0.932	0.924
10	0.915	0.907	0.899	0.891	0.884	0.876	0.868	0.860	0.853	0.845
20	0.838	0.831	0.823	0.816	0.809	0.802	0.795	0.788	0.781	0.774
30	0.767	0.760	0.754	0.747	0.740	0.734	0.727	0.721	0.715	0.708
40	0.702	0.696	0.690	0.684	0.678	0.672	0.666	0.660	0.654	0.648
50	0.643	0.637	0.631	0.626	0.620	0.615	0.610	0.604	0.599	0.594
60	0.588	0.583	0.578	0.573	0.568	0.563	0.558	0.553	0.548	0.543
70	0.539	0.534	0.529	0.524	0.520	0.515	0.511	0.506	0.502	0.497
80	0.493	0.489	0.484	0.480	0.476	0.472	0.468	0.463	0.459	0.455
90	0.451	0.447	0.443	0.439	0.436	0.432	0.428	0.424	0.420	0.417
100	0.413	0.409	0.406	0.402	0.399	0.395	0.392	0.388	0.385	0.382
110	0.378	0.375	0.372	0.368	0.365	0.362	0.359	0.355	0.352	0.349
120	0.346	0.343	0.340	0.337	0.334	0.331	0.328	0.325	0.323	0.320
130	0.317	0.314	0.311	0.309	0.306	0.303	0.301	0.298	0.295	0.293
140	0.290	0.288	0.285	0.282	0.280	0.278	0.275	0.273	0.270	0.268
150	0.266	0.263	0.261	0.259	0.256	0.254	0.252	0.250	0.247	0.245
160	0.243	0.241	0.239	0.237	0.235	0.233	0.231	0.228	0.226	0.224
170	0.223	0.221	0.219	0.217	0.215	0.213	0.211	0.209	0.207	0.205
180	0.204	0.202	0.200	0.198	0.197	0.195	0.193	0.191	0.190	0.188
190	0.186	0.185	0.183	0.182	0.180	0.178	0.177	0.175	0.174	0.172

To calculate a precalibration activity, divide the activity at calibration time by the decay factor.  
For a postcalibration activity, multiply the activity at calibration time by the decay factor.