$^{225}_{88}\mathrm{Ra}_{137}$

1 Decay Scheme

Ra-225 disintegrates 100% by beta minus emission to levels in Ac-225.
Le radium 225 se désintègre par émission bêta moins vers des niveaux excités de l'actinium 225.

2 Nuclear Data

$T_{1/2}(^{225}\mathrm{Ra})$	:	14,82	(19)	d
$T_{1/2}(^{225}\mathrm{Ac})$	:	10,0	(1)	d
$Q^-(^{225}\mathrm{Ra})$	:	356	(5)	keV

2.1 β^- Transitions

	Energy keV	Probability × 100	Nature	lg ft
$\beta^-_{0,3}$	200 (5)	< 0,01	2nd Forbidden	> 10,1
$\beta^-_{0,2}$	235 (5)	< 0,01	Unique 1st Forbidden	> 9,9
$\beta^-_{0,1}$	316 (5)	68,8 (20)	Allowed	6,87
$\beta^-_{0,0}$	356 (5)	31,2 (20)	1st Forbidden	7,38

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_L	α_M	α_T
$\gamma_{1,0}$(Ac)	40,09 (5)	68,8 (17)	E1	0,974 (14)	0,24 (4)	1,293 (19)

3 Atomic Data

3.1 Ac

ω_K : 0,969 (4)
$\bar{\omega}_L$: 0,464 (18)
n_{KL} : 0,799 (5)

3.1.1 X Radiations

		Energy keV	Relative probability
X_L			
	Lℓ	10,8701	
	Lα	12,5002 – 12,6505	
	Lη	14,0807	
	Lβ	14,6024 – 16,6263	
	Lγ	17,813 – 18,9228	

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger L	5,87 – 19,69	

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e_{AL}	(Ac)	5,87 - 19,69	15,7 (7)
$ec_{1,0\ L}$	(Ac)	20,24 - 24,22	29,2 (8)
$ec_{1,0\ M}$	(Ac)	35,09 - 36,87	7,2 (12)
$ec_{1,0\ N}$	(Ac)	38,82 - 39,78	1,86 (27)
$\beta^-_{0,3}$	max:	200 (5)	< 0,01
$\beta^-_{0,3}$	avg:	54,0 (15)	
$\beta^-_{0,2}$	max:	235 (5)	< 0,01
$\beta^-_{0,2}$	avg:	70,5 (16)	
$\beta^-_{0,1}$	max:	316 (5)	68,8 (20)
$\beta^-_{0,1}$	avg:	88,3 (16)	
$\beta^-_{0,0}$	max:	356 (5)	31,2 (20)
$\beta^-_{0,0}$	avg:	100,7 (16)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.
XL	(Ac)	10,8701 — 18,9228	13,6 (6)

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$(Ac)	40,09 (5)	30,0 (7)

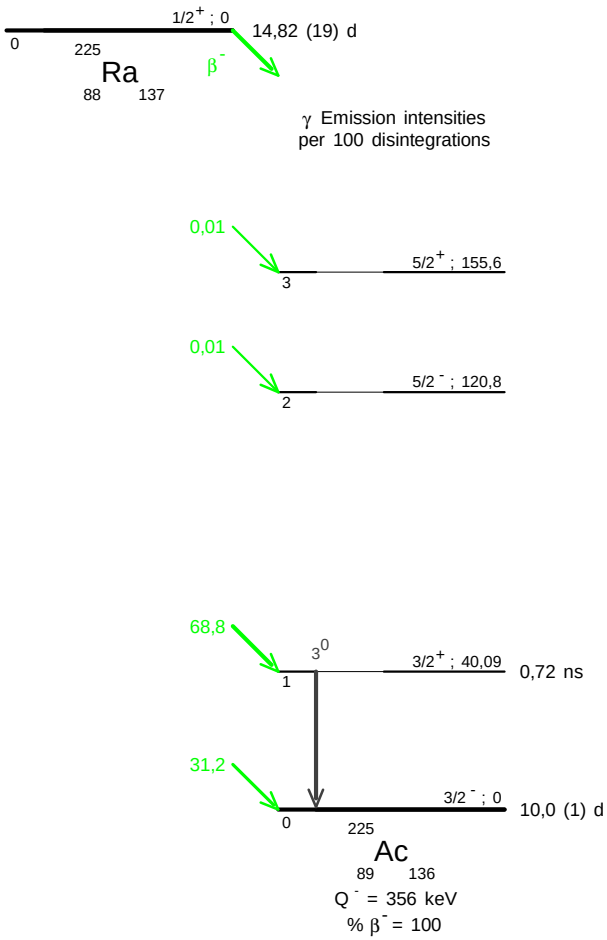
6 Main Production Modes

Ra − 226(n,2n)Ra − 225

Descendant of U − 233()

7 References

- A.C.English, T.E.Cranshaw, P.Demers, J.A.Harvey, E.P.Hincks, J.V.Jelley, A.N.May. Phys.Rev. 72 (1947) 253
  (Half-life)
- F.Hagemann, L.I.Katzin, M.H.Studier, G.T.Seaborg, A.Ghiorso. Phys.Rev. 79 (1950) 435
  (Half-life)
- L.B.Magnusson, F.Wagner, Jr., D.W.Engelkemeir, M.S. Freedman. ANL-5386 (1955)
  (Gamma ray energies emission probabilities)
- F.S.Stephens. UCRL-2970 (1955)
  (Gamma ray energies emission probabilities)
- J.K.Dickens, J.W.McConnell. Radiochem. Radioanal. Lett. 47 (1981) 331
  (Gamma ray energies emission probabilities)
- R.G.Helmer, C.W.Reich, M.A.Lee, I.Ahmad. Int. J. Appl. Radiat. Isotop. 37 (1986) 139
  (Gamma ray emission probabilities)
- I.Ahmad, J.E.Gindler, A.M.Friedman, R.R.Chasman, T.Ishii. Nucl. Phys. A472 (1987) 285
  (Gamma ray energies)
- G.J.Miller, J.C.McGeorge, I.Anthony, R.O. Owens. Phys.Rev. C36 (1987) 420
  (Half-life)
- Y.A.Akovali. Nucl. Data Sheets 60 (1990) 617
  (NDS)
- E.Schönfeld, H.Janssen. Nucl. Instrum. Meth. Phys. Res. A369 (1996) 527
  (Atomic data)
- G.Audi, A.H.Wapstra, C.Thibault. Nucl. Phys. A729 (2003) 129
  (Q)
- T. Kibédi, T.W. Burrows, M.B. Trzhaskovskaya, P.M. Davidson, and C.W.Nestor, Jr. Nucl. Instrum. Methods Phys. Res. A589 (2008) 202
  (Theoretical Internal Conversion Coefficients)


1/2+ ; 0
14,82 (19) d
0
225
Ra
88
137
β-
γ Emission intensities
per 100 disintegrations
0,01
5/2+ ; 155,6
3
0,01
5/2- ; 120,8
2
68,8
3 0
3/2+ ; 40,09
0,72 ns
1
31,2
3/2- ; 0
10,0 (1) d
0
225
Ac
89
136
Q- = 356 keV
% β- = 100