$^{215}_{84}\mathrm{Po}_{131}$

1 Decay Scheme

Po-215 decays 100 % by alpha transitions to Pb-211 and $2.3(2) \times 10^{-4}$ by beta- emission to At215.
Le polonium 215 se désintègre par émissions alpha principalement vers le niveau fondamental du plomb 211. Il existe un faible branchement bêta moins vers l'astate 215.

2 Nuclear Data

$T_{1/2}(^{215}\mathrm{Po})$	:	1,781	(4)	10^{-3} s
$T_{1/2}(^{215}\mathrm{At})$	:	0,10	(2)	10^{-3} s
$T_{1/2}(^{211}\mathrm{Pb})$	:	36,1	(2)	min
$Q^{\alpha}(^{215}\mathrm{Po})$	:	7526,3	(8)	keV
$Q^{-}(^{215}\mathrm{Po})$	:	715	(7)	keV

2.1 α Transitions

	Energy keV	Probability × 100	F
$\alpha_{0,7}$	6632 (3)	0,0003	365
$\alpha_{0,6}$	6711 (3)	0,0020 (6)	109
$\alpha_{0,5}$	6793 (3)	0,0008 (3)	550
$\alpha_{0,4}$	6883 (3)	0,0008 (3)	1170
$\alpha_{0,3}$	6928 (3)	0,0016 (5)	8500
$\alpha_{0,2}$	6942 (3)	0,0004 (2)	3800
$\alpha_{0,1}$	7087,4 (8)	0,06 (2)	82
$\alpha_{0,0}$	7526,3 (8)	99,934 (20)	1,34

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{7,2}$(Pb)	310 (4)						
$\gamma_{1,0}$(Pb)	438,9 (2)	0,06 (2)	E2	0,0275 (4)	0,00984 (14)	0,00247 (4)	0,0405 (6)
$\gamma_{2,0}$(Pb)	584 (3)						
$\gamma_{3,0}$(Pb)	598 (3)						
$\gamma_{4,0}$(Pb)	643 (3)		(M1+E2)	0,029 (17)	0,0054 (23)	0,0013 (6)	0,036 (20)
$\gamma_{5,0}$(Pb)	733 (3)						
$\gamma_{6,0}$(Pb)	815 (3)						
$\gamma_{7,0}$(Pb)	894 (3)						

3 Atomic Data

3.1 Pb

ω_K : 0,963 (4)
$\bar{\omega}_L$: 0,379 (15)
n_{KL} : 0,811 (5)

3.1.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	72,8049		59,5
	$K\alpha_1$	74,97		100
	$K\beta_3$	84,451	}	
	$K\beta_1$	84,937	}	
	$K\beta''_5$	85,47	}	34,18
	$K\beta_2$	87,238	}	
	$K\beta_4$	87,58	}	10,32
	$KO_{2,3}$	87,911	}	
X_L				
	$L\ell$	9,186		
	$L\alpha$	10,4495 – 10,5512		
	$L\eta$	11,3495		
	$L\beta$	12,1443 – 13,3763		
	$L\gamma$	14,3078 – 15,2169		

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	56,028 – 61,669	100
KLX	68,181 – 74,969	55,8
KXY	80,3 – 88,0	7,78
Auger L	5,33 – 15,82	

4 α Emissions

	Energy keV	Probability × 100
$\alpha_{0,7}$	6509 (3)	0,0003
$\alpha_{0,6}$	6586 (3)	0,0020 (6)
$\alpha_{0,5}$	6667 (3)	0,0008 (3)
$\alpha_{0,4}$	6755 (3)	0,0008 (3)
$\alpha_{0,3}$	6799 (3)	0,0016 (5)
$\alpha_{0,2}$	6813 (3)	0,0004 (2)
$\alpha_{0,1}$	6955,4 (8)	0,06 (2)
$\alpha_{0,0}$	7386,1 (8)	99,934 (20)

5 Electron Emissions

		Energy keV	Electrons per 100 disint.
e_{AL}	(Pb)	5,33 - 15,82	0,00115 (14)
e_{AK}	(Pb)		0,000059 (21)
	KLL	56,028 - 61,669 }	
	KLX	68,181 - 74,969 }	
	KXY	80,3 - 88,0 }	
$ec_{1,0\ K}$	(Pb)	350,9 (2)	0,0016 (5)
$ec_{1,0\ L}$	(Pb)	423,0 - 425,9	0,00057 (19)
$ec_{1,0\ M}$	(Pb)	435,0 - 436,4	0,000143 (47)

6 Photon Emissions

6.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.	
XL	(Pb)	9,186 — 15,2169		0,00071 (12)	
XKα_2	(Pb)	72,8049		0,00045 (15)	} Kα
XKα_1	(Pb)	74,97		0,00075 (25)	}
XKβ_3	(Pb)	84,451	}		
XKβ_1	(Pb)	84,937	}	0,00026 (9)	K$'\beta_1$
XKβ''_5	(Pb)	85,47	}		
XKβ_2	(Pb)	87,238	}		
XKβ_4	(Pb)	87,58	}	0,000078 (26)	K$'\beta_2$
XKO$_{2,3}$	(Pb)	87,911	}		

6.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$(Pb)	438,9 (2)	0,058 (19)

7 Main Production Modes

U − 235 decay chain

8 References

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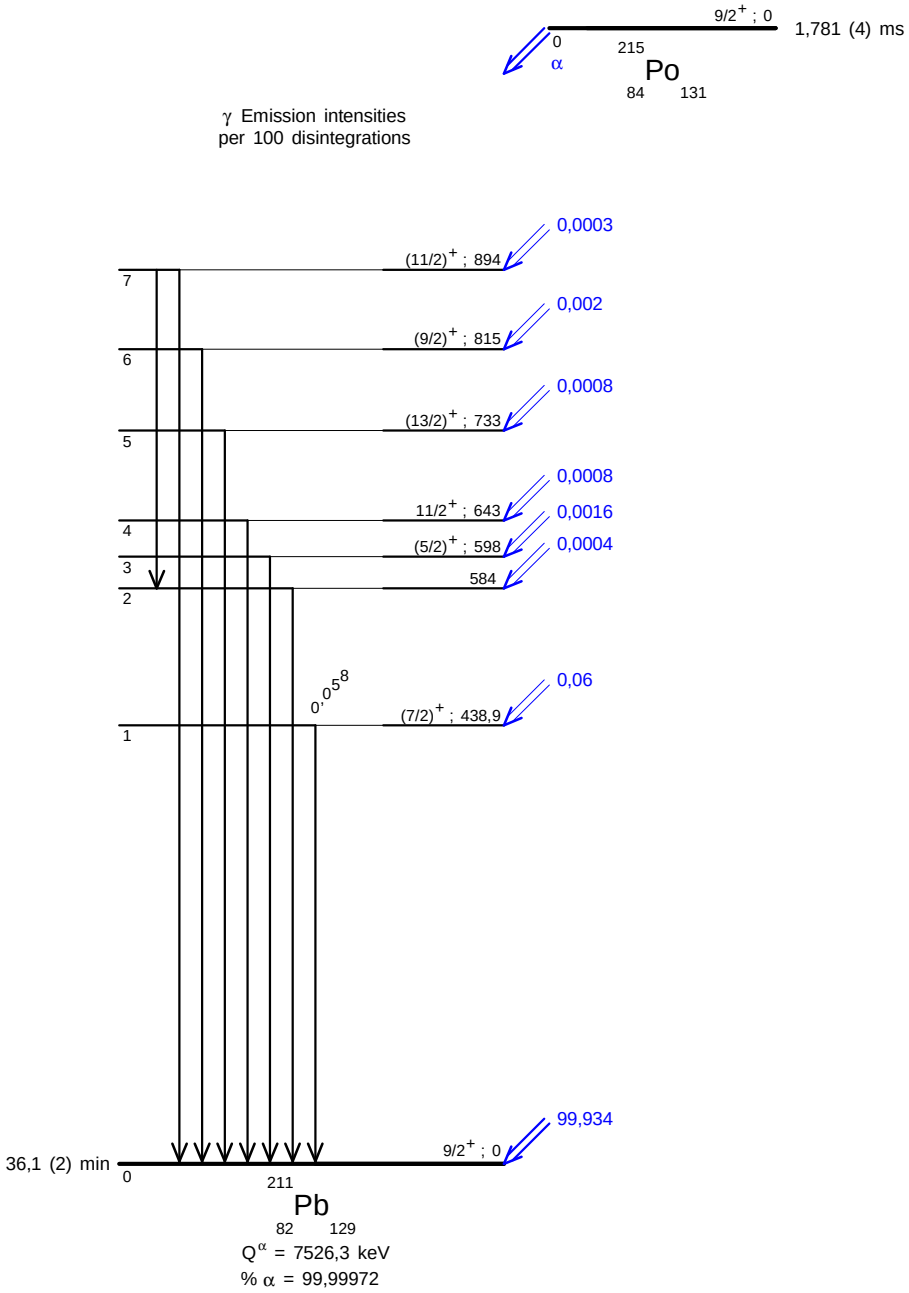
9/2+ ; 0
1,781 (4) ms
0
α
215
Po
84
131
γ Emission intensities
per 100 disintegrations
0,0003
(11/2)+ ; 894
7
0,002
(9/2)+ ; 815
6
0,0008
(13/2)+ ; 733
5
0,0008
11/2+ ; 643
0,0016
(5/2)+ ; 598
0,0004
584
4
3
2
0,058
0,06
(7/2)+ ; 438,9
1
99,934
9/2+ ; 0
36,1 (2) min
0
211
Pb
82
129
Q α = 7526,3 keV
% α = 99,99972