$$^{212}_{82}\mathrm{Pb}_{130}$$

1 Decay Scheme

^{212}Pb decays by β^- emission to the 1^- ground state and two excited states (238.6 keV, $J^\pi = 0^-$ and 415.3 keV, $J^\pi = 1^-$) of ^{212}Bi.

Le ^{212}Pb décroît par émission β^- vers l'état fondamental 1^- et deux états excités ($J^\pi = 0^-$ à 238,6 keV et $J^\pi = 1^-$ à 415,3 keV) du ^{212}Bi.

2 Nuclear Data

$T_{1/2}(^{212}\mathrm{Pb}\ )$: 10,630 (7) h
$Q^-(^{212}\mathrm{Pb}\ )$: 569,0 (18) keV

2.1 β^- Transitions

	Energy (keV)	Probability (%)	Nature	log ft
$\beta^-_{0,3}$	153,7 (18)	4,92 (8)	1st Forbidden	5,45
$\beta^-_{0,2}$	330,4 (18)	80,8 (14)	1st Forbidden	5,28
$\beta^-_{0,0}$	569,0 (18)	14,4 (14)	1st Forbidden	6,80

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy (keV)	$P_{\gamma+ce}$ (%)	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{1,0}$(Bi)	115,183 (5)	4,57 (8)	M1	5,53 (8)	0,972 (14)	0,229 (4)	6,8 (1)
$\gamma_{3,2}$(Bi)	176,640 (9)	0,162 (7)	M1	1,646 (23)	0,287 (4)	0,0675 (10)	2,02 (3)
$\gamma_{2,0}$(Bi)	238,632 (2)	81 (1)	M1	0,71 (1)	0,1232 (18)	0,0290 (4)	0,872 (13)
$\gamma_{3,1}$(Bi)	300,089 (10)	4,74 (5)	M1	0,378 (6)	0,0653 (10)	0,01534 (22)	0,464 (7)
$\gamma_{3,0}$(Bi)	415,272 (9)	0,0155 (36)	(M1)	0,1571 (22)	0,0269 (4)	0,00632 (9)	0,192 (3)

3 Atomic Data

3.1 Bi

ω_K : 0,964 (4)
$\bar{\omega}_L$: 0,391 (16)
n_{KL} : 0,809 (5)

3.1.1 X Radiations

	Energy (keV)	Relative probability
X_K		
$K\alpha_2$	74,8157	59,77
$K\alpha_1$	77,1088	100
$K\beta_3$	86,835	34,25391
$K\beta_1$	87,344	
$K\beta_5''$	87,862	
$K\beta_2$	89,732	10,48169
$K\beta_4$	90,074	
$KO_{2,3}$	90,421	
X_L		
$L\ell$	9,4207	
$L\alpha$	10,7308 - 10,8387	
$L\eta$	11,7127	
$L\beta$	12,4814 - 13,8066	
$L\gamma$	14,7735 - 15,7084	

3.1.2 Auger Electrons

	Energy (keV)	Relative probability
Auger K		
KLL	57,491 - 63,419	100
KLX	70,025 - 77,105	56
KXY	82,53 - 90,52	7,84
Auger L	5,4204 - 16,3366	

4 Electron Emissions

		Energy (keV)	Electrons (per 100 disint.)
e_{AL}	(Bi)	5,4204 - 16,3366	21,20 (26)
e_{AK}	(Bi)		
	KLL	57,491 - 63,419	1,27 (15)
	KLX	70,025 - 77,105	
	KXY	82,53 - 90,52	
$ec_{1,0\ T}$	(Bi)	24,657 - 115,159	3,99 (7)
$ec_{1,0\ K}$	(Bi)	24,657 (5)	3,24 (6)
$ec_{3,2\ T}$	(Bi)	86,11 - 176,62	0,1085 (45)
$ec_{1,0\ L}$	(Bi)	98,796 - 101,764	0,57 (1)
$ec_{1,0\ M}$	(Bi)	111,184 - 112,603	0,1342 (27)
$ec_{2,0\ T}$	(Bi)	148,106 - 238,608	37,7 (7)
$ec_{2,0\ K}$	(Bi)	148,106 (2)	30,7 (5)
$ec_{3,1\ T}$	(Bi)	209,563 - 300,065	1,502 (27)
$ec_{3,1\ K}$	(Bi)	209,563 (12)	1,224 (23)
$ec_{2,0\ L}$	(Bi)	222,245 - 225,213	5,33 (9)
$ec_{2,0\ M}$	(Bi)	234,633 - 236,052	1,255 (21)
$ec_{2,0\ N}$	(Bi)	237,694 - 238,475	0,321 (6)
$ec_{3,1\ L}$	(Bi)	283,702 - 286,670	0,2114 (38)
$\beta^-_{0,3}$	max:	153,7 (18)	4,92 (8)
	avg:	40,6 (5)	
$\beta^-_{0,2}$	max:	330,4 (18)	80,8 (14)
	avg:	92,7 (6)	
$\beta^-_{0,0}$	max:	569,0 (18)	14,4 (14)
	avg:	170,6 (6)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy (keV)	Photons (per 100 disint.)	
XL	(Bi)	9,4207 - 15,7084	13,46 (24)	
XKα_2	(Bi)	74,8157	9,94 (17)	Kα
XKα_1	(Bi)	77,1088	16,63 (27)	Kα
XKβ_3	(Bi)	86,835	5,69 (13)	K$'\beta_1$
XKβ_1	(Bi)	87,344	5,69 (13)	K$'\beta_1$
XKβ''_5	(Bi)	87,862	5,69 (13)	K$'\beta_1$
XKβ_2	(Bi)	89,732	1,74 (5)	K$'\beta_2$
XKβ_4	(Bi)	90,074	1,74 (5)	K$'\beta_2$
XKO$_{2,3}$	(Bi)	90,421	1,74 (5)	K$'\beta_2$

5.2 Gamma Emissions

	Energy (keV)	Photons (per 100 disint.)
$\gamma_{1,0}$(Bi)	115,183 (5)	0,5862 (61)
$\gamma_{3,2}$(Bi)	176,640 (9)	0,0537 (21)
$\gamma_{2,0}$(Bi)	238,632 (2)	43,26 (42)
$\gamma_{3,1}$(Bi)	300,089 (10)	3,238 (31)
$\gamma_{3,0}$(Bi)	415,272 (9)	0,013 (3)

6 Main Production Modes

^{216}Po(α)^{212}Pb

^{210}Po(t,p)^{212}Pb

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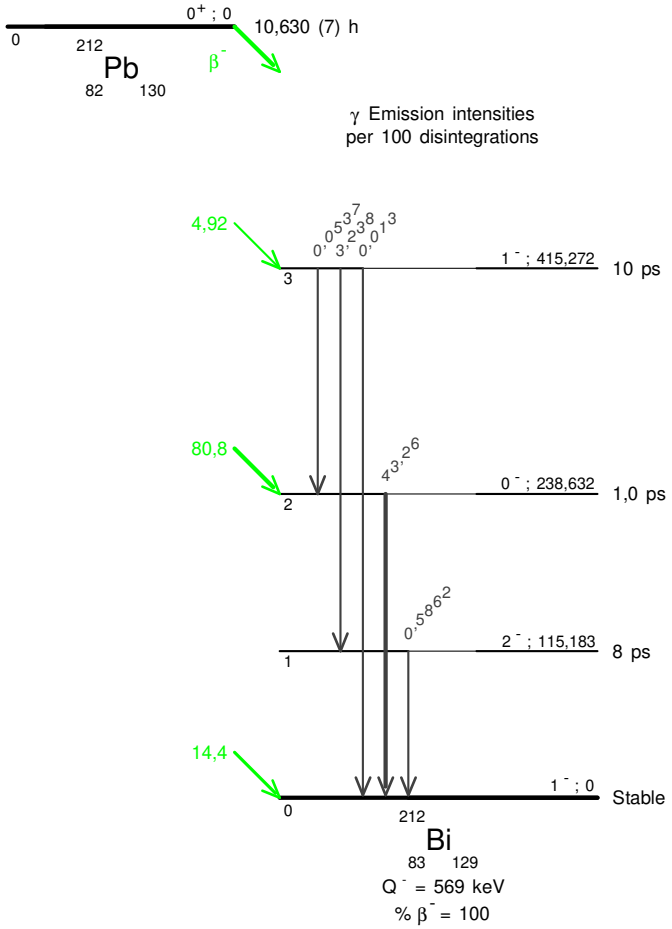
0+ ; 0
10,630 (7) h
0
212
Pb
82
130
β-
γ Emission intensities
per 100 disintegrations
4,92
0,0 5 3 7 3 8 2 3 0 1 3
0, 3, 0,
1 - ; 415,272
10 ps
3
80,8
4 3,2 6
0 - ; 238,632
1,0 ps
2
0,5 8 6 2
2 - ; 115,183
8 ps
1
14,4
1 - ; 0
Stable
0
212
Bi
83
129
Q - = 569 keV
% β- = 100