



1 Decay Scheme

Po-214 decays by alpha emission mainly to the Pb-210 ground state level.
Le polonium 214 se désintègre par émission alpha principalement vers le niveau fondamental du plomb 210.

2 Nuclear Data

$T_{1/2}({}^{214}\text{Po})$: 162,3 (12) 10⁻⁶ s
 $T_{1/2}({}^{210}\text{Pb})$: 22,23 (12) a
 $Q^{\alpha}({}^{214}\text{Po})$: 7833,46 (6) keV

2.1 α Transitions

	Energy keV	Probability × 100	F
α _{0,2}	6735,8 (10)	0,000058 (2)	400
α _{0,1}	7033,76 (21)	0,0105 (7)	27
α _{0,0}	7833,46 (6)	99,9895 (7)	1

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	P _{γ+ce} × 100	Multipolarity	α _K	α _L	α _M	α _T
γ _{2,1} (Pb)	298 (1)	0,000058 (20)	E2	0,0661 (11)	0,0389 (8)	0,00999 (20)	0,1180 (21)
γ _{1,0} (Pb)	799,7 (1)	0,0105 (7)	E2	0,00810 (12)	0,001763 (25)	0,000425 (6)	0,01042 (15)

3 Atomic Data

3.1 Pb

$$\begin{aligned}\omega_K &: 0,963 & (4) \\ \bar{\omega}_L &: 0,379 & (15) \\ n_{KL} &: 0,811 & (5)\end{aligned}$$

3.1.1 X Radiations

	Energy keV	Relative probability
X _K		
K α_2	72,8049	59,5
K α_1	74,97	100
K β_3	84,451	}
K β_1	84,937	}
K β_5''	85,47	}
		34,2
K β_2	87,238	}
K β_4	87,58	}
KO _{2,3}	87,911	}
		10,3
X _L		
L ℓ	9,19	
L α	10,4495 – 10,5512	
L η	11,3495	
L β	12,1443 – 12,7953	
L γ	14,3078 – 15,22	

4 α Emissions

	Energy keV	Probability $\times 100$
$\alpha_{0,2}$	6610,1 (10)	0,000058 (2)
$\alpha_{0,1}$	6902,6 (3)	0,0105 (7)
$\alpha_{0,0}$	7686,82 (6)	99,9895 (7)

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Pb)	9,19 — 15,22	0,0000347 (13)	
XKα ₂	(Pb)	72,8049	0,0000246 (15)	} Kα
XKα ₁	(Pb)	74,97	0,0000414 (25)	
XKβ ₃	(Pb)	84,451	}	} K'β ₁
XKβ ₁	(Pb)	84,937	}	
XKβ ₅ ''	(Pb)	85,47	}	
XKβ ₂	(Pb)	87,238	}	} K'β ₂
XKβ ₄	(Pb)	87,58	}	
XKO _{2,3}	(Pb)	87,911	}	

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
γ _{2,1} (Pb)	298 (1)	0,000052 (18)
γ _{1,0} (Pb)	799,7 (1)	0,0104 (6)

6 Main Production Modes

Ra – 226 decay chain

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