$^{218}_{86}\mathrm{Rn}_{132}$

1 Decay Scheme

Rn-218 disintegrates by alpha emission to the 609 keV level (0,127 (7) %) and to the ground state (99,873 (7) %) of Po-214.
Le radon 218 se désintègre par émission alpha vers le niveau excité de 609 keV (0,126 (8) %) et le fondamental (99,874 (8) %) du polonium 214.

2 Nuclear Data

$T_{1/2}(^{218}\mathrm{Rn})$	:	36,0	(19)	10^{-3} s
$T_{1/2}(^{214}\mathrm{Po})$	:	162,3	(12)	10^{-6} s
$Q^{\alpha}(^{218}\mathrm{Rn})$	:	7262,5	(19)	keV

2.1 α Transitions

	Energy keV	Probability × 100	F
$\alpha_{0,1}$	6653,2 (19)	0,127 (7)	4,8
$\alpha_{0,0}$	7262,5 (19)	99,873 (7)	1

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{1,0}$(Po)	609,31 (6)	0,127 (7)	E2	0,01487 (21)	0,00416 (6)	0,001030 (15)	0,0204 (3)

3 Atomic Data

3.1 Po

ω_K : 0,965 (4)
$\bar{\omega}_L$: 0,403 (16)
n_{KL} : 0,807 (5)

3.1.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	76,864		60,05
	$K\alpha_1$	79,293		100
	$K\beta_3$	89,256	}	
	$K\beta_1$	89,807	}	
	$K\beta_5''$	90,363	}	34,43
	$K\beta_2$	92,263	}	
	$K\beta_4$	92,618	}	10,71
	$KO_{2,3}$	92,983	}	
X_L				
	$L\ell$	9,66		
	$L\alpha$	11,0161 – 11,1303		
	$L\eta$	12,0847		
	$L\beta$	12,8239 – 13,6358		
	$L\gamma$	15,251 – 16,21		

4 α Emissions

	Energy keV	Probability × 100
$\alpha_{0,1}$	6531,1 (19)	0,127 (7)
$\alpha_{0,0}$	7129,2 (19)	99,873 (7)

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.	
XL	(Po)	9,66 — 16,21		0,00080 (3)	
XKα_2	(Po)	76,864		0,00052 (4)	} Kα
XKα_1	(Po)	79,293		0,00086 (6)	}
XKβ_3	(Po)	89,256	}		
XKβ_1	(Po)	89,807	}	0,000296 (21)	K$'\beta_1$
XKβ''_5	(Po)	90,363	}		
XKβ_2	(Po)	92,263	}		
XKβ_4	(Po)	92,618	}	0,000092 (7)	K$'\beta_2$
XKO$_{2,3}$	(Po)	92,983	}		

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$(Po)	609,31 (6)	0,124 (7)

6 Main Production Modes

Ra – 226 decay chain

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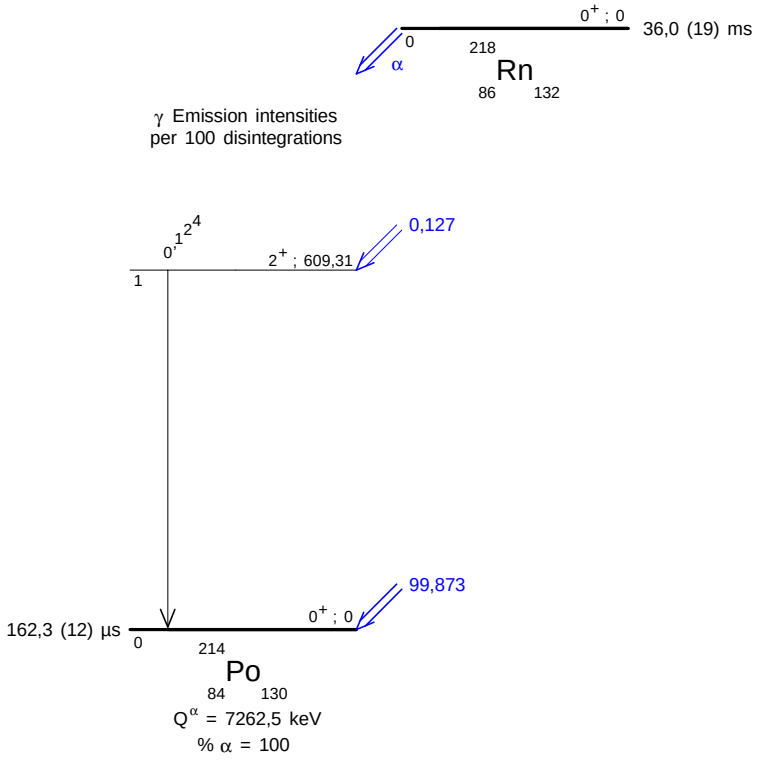
0+ ; 0
36,0 (19) ms
0
218
Rn
86
132
α
γ Emission intensities
per 100 disintegrations
0,127
0+
1
2+ ; 609,31
99,873
162,3 (12) µs
0+ ; 0
0
214
Po
84
130
Q α = 7262,5 keV
% α = 100