

^{211}At ε decay 1975Ja04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. K. Tuli, P. Blokhin, J. Kaur, J. Y. Lee and N. Sharma		NDS 114, 661 (2013)	28-Feb-2013

Parent: ^{211}At : $E=0.0$; $J^\pi=9/2^-$; $T_{1/2}=7.214$ h 7; $Q(\varepsilon)=785.3$ 25; $\% \varepsilon$ decay=58.20 8
 ^{211}At - $\% \varepsilon$ decay: $I_\varepsilon=58.20\%$ 8 from $I\alpha(^{211}\text{At})/(I\alpha(^{211}\text{At})+I\alpha(^{211}\text{Po}))$ (see ^{211}At α decay).
 Others: 1985La17, 1978Ya04, 1959Ka17, 1954Mi70.

 ^{211}Po Levels

E(level) [†]	J^π [‡]
0.0	9/2 ⁺
687.00 10	11/2 ⁺

[†] From E_γ .

[‡] From Adopted Levels.

 ε radiations

Electron capture branches have been deduced from α , γ , and ce measurements.

E(decay)	E(level)	I_ε [†]	Log ft	Comments
(98 3)	687.00	0.27 1	5.75 4	$\varepsilon\text{K}=0.016$ 17; $\varepsilon\text{L}=0.683$ 10; $\varepsilon\text{M}+=0.301$ 7
(785.3 25)	0.0	57.93 1	5.972 4	$\varepsilon\text{K}=0.7731$ 2; $\varepsilon\text{L}=0.1693$ 1; $\varepsilon\text{M}+=0.05758$ 4

[†] Absolute intensity per 100 decays.

 $\gamma(^{211}\text{Po})$

I_γ normalization: I_γ measured relative to $I_\gamma(569.65\gamma,^{207}\text{Pb})=100$ in a $^{211}\text{At} + ^{211}\text{Po}$ source in equilibrium.
 $I(569.65\gamma,^{207}\text{Pb})=0.545$ 21 per 100 ^{211}Po decays (see ^{211}Po α decay) and $I\alpha(^{211}\text{Po})=I\varepsilon(^{211}\text{At})$.

E_γ	I_γ [#]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	δ [‡]	α [†]	Comments
687.0 1	82 2	687.00	11/2 ⁺	0.0	9/2 ⁺	M1+E2	-0.20 2	0.0536 9	$\alpha(\text{K})=0.0438$ 7; $\alpha(\text{L})=0.00752$ 12; $\alpha(\text{M})=0.00177$ 3 $\alpha(\text{N})=0.000455$ 7; $\alpha(\text{O})=9.53 \times 10^{-5}$ 15; $\alpha(\text{P})=1.232 \times 10^{-5}$ 19 E_γ : others: 686.7 5 (1978Ya04), 670 (1959Ka17), 671 5 (1954Mi70). I_γ : weighted average of 83 2 (1985La17) and 79 4 (1975Ja04), measured relative to $I(569.65\gamma,^{207}\text{Pb})=100$. α : $\alpha(\text{K})_{\text{exp}}=0.0043$ 6 measured relative to $\alpha(\text{K})(569.65\gamma, \text{E2 in } ^{207}\text{Pb})=0.01583$. (Theory: $\alpha(\text{K})=0.0438$).

[†] Additional information 1.

[‡] From ^{211}Po adopted γ radiations.

[#] For absolute intensity per 100 decays, multiply by 0.00318 12.

^{211}At ϵ decay 1975Ja04Decay SchemeIntensities: $I_{(\gamma+ce)}$ per 100 parent decays