^{211}Po IT decay (25.3 s) 1998Mc03

History

Type	Author	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}Po: E=1462 *5*; $J^{\pi}=(25/2^+)$; $T_{1/2}$=25.3 s *4*; %IT decay=0.016 *4*

Isomer seen in ^{208}Pb(^{9}Be,α2nγ). Measured prompt and delayed γ, $\gamma\gamma$(t), deduced isomer half-life.

^{211}Po Levels

E(level)	J^{π}†	$T_{1/2}$†	Comments
0.0	$9/2^+$	0.516 s *3*	
687.2 *4*	$11/2^+$		
1064.8 *4*	$15/2^-$	14.0 ns *2*	
1427.8 *7*	$(17/2^+)$		
1462 *5*	$(25/2^+)$	25.3 s *4*	%α=99.984 *4*; %IT=0.016 *4* E(level): from ΔQ(α) of the α groups from ^{211}Po(1462 level) and ^{211}Po(g.s.) to ^{207}Pb g.s. J^{π}: shell model; $T_{1/2}$ and branching ratio indicate that the unobserved 34-keV isomeric transition to $(17/2^+)$ level is probably an E4 or M4. $T_{1/2}$: weighted average of 24.2 s *5* (1974Ba29), 25.5 s *3* (1962Pe15). 28 s *1* (1982Bo04), 25 s *2* (1962Ka15), 25 s (1954Sp32), 24.9 s 14 (1998Mc03). %α,%IT: measured Iα(7449.3) from ^{211}Po g.s. decaying with $T_{1/2}$=25.2 s (1989Ku08).

† From Adopted Levels.

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γ(^{211}Po)

E_γ	I_γ[#&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[†]	$I_{(\gamma+ce)}$[@&]	Comments
(34 *5*)		1462	(25/2$^+$)	1427.8	(17/2$^+$)	(E4)		6.5×10^6 *50*	100	E_γ: γ not observed, deduced from level scheme (1989Ku08). Mult.: Weisskopf estimates suggest E4 or M4; ΔJ^π from shell model prediction suggests E4.
363.0 *5*	98.0	1427.8	(17/2$^+$)	1064.8	15/2$^-$	(E1)		0.0204	100	α(K)=0.01668 *24*; α(L)=0.00283 *4*; α(M)=0.000664 *10* α(N)=0.0001697 *25*; α(O)=3.48×10^{-5} *5*; α(P)=4.26×10^{-6} *7*
377.6 *5*	4.2	1064.8	15/2$^-$	687.2	11/2$^+$	M2		0.878	7.8	α(K)=0.668 *10*; α(L)=0.1584 *24*; α(M)=0.0390 *6* α(N)=0.01011 *15*; α(O)=0.00210 *3*; α(P)=0.000265 *4*
687.1 *5*	7.4	687.2	11/2$^+$	0.0	9/2$^+$	M1+E2	−0.20 *2*	0.0536 *9*	7.8	α(K)=0.0438 *7*; α(L)=0.00752 *12*; α(M)=0.00177 *3* α(N)=0.000455 *7*; α(O)=9.52×10^{-5} *15*; α(P)=1.231×10^{-5} *19*
1064.9 *5*	90.8	1064.8	15/2$^-$	0.0	9/2$^+$	E3		0.01499	92.2	α(K)=0.01105 *16*; α(L)=0.00297 *5*; α(M)=0.000736 *11* α(N)=0.000190 *3*; α(O)=3.86×10^{-5} *6*; α(P)=4.55×10^{-6} *7*

† Additional information 1.
‡ From Adopted Gammas.
# I(γ+ce)/(1+α).
@ from decay scheme. I(γ+ce)(687γ)=I(γ+ce)(377γ). Iγ(1064γ)/Iγ(377γ) =100 *3*/4.6 *3* from 1998Mc03.
& For absolute intensity per 100 decays, multiply by 0.00016 *4*.

$^{211}_{84}Po_{127}$-2

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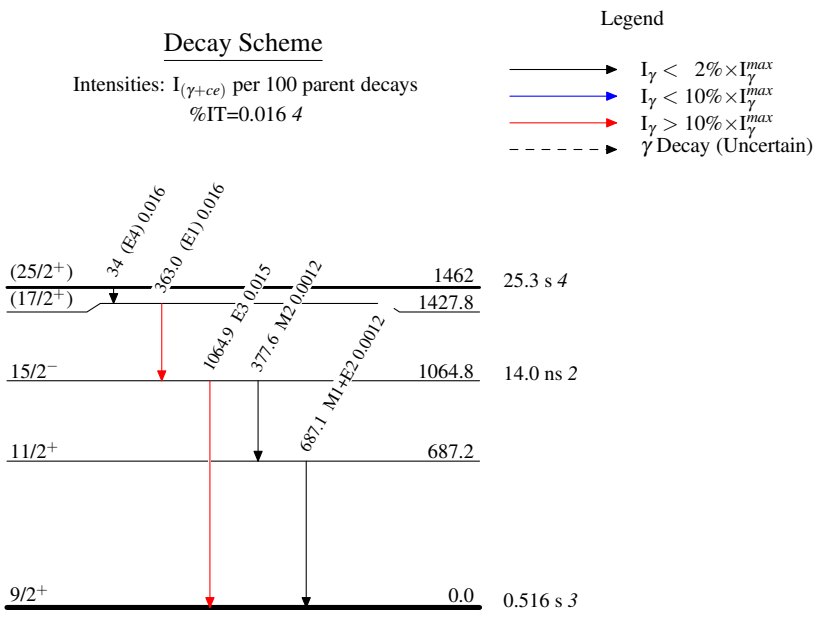
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

%IT=0.016 *4*



$^{211}_{84}Po_{127}$