^{205}Po ε decay 1972Al25

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 166, 1 (2020)	20-Apr-2020

Parent: ^{205}Po: E=0.0; $J^{\pi}=5/2^-$; $T_{1/2}$=1.74 h *8*; Q(ε)=3543 *11*; %ε+%$β^+$ decay=99.960 *12*

Mass-separated source; Detectors: NaI(Tl), twoGe(Li), 2 mm thick Si(Li) with energy resolution of about 4 keV, a double focusing magnetic spectrometer; Measured: γ, γγ coin, NaI γ(t), ce.

Others: 1969Al10, 1969Ho37, 1970DaZM, 1970Jo26, 1971Sh22, 1983He09, and 1986Be07.

^{205}Bi Levels

E(level)[†]	J^{π}[‡]	$T_{1/2}$[‡]	Comments
0.0[#]	$9/2^-$	14.91 d *7*	
795.86 *9*	$11/2^-$		
849.84 *7*	$7/2^-$		
872.39 *7*	$5/2^-$		
1001.22[@] *7*	$7/2^-$		
1044.03 *8*	$(9/2)^-$		
1239.12 *10*	$7/2^-$		
1336.25 *10*	$5/2^-$		
1472.21 *12*	$1/2^-$		
1486.64 *9*	$3/2^-,5/2^-$		
1497.17[&] *9*	$1/2^+$	7.9 μs *7*	$T_{1/2}$: From γγ(t) in 1972Al25.
1709.18[a] *10*	$3/2^+$	105 ps *10*	$T_{1/2}$: From ceγ(t) using a spectrum produced by gating on E(ce)(K) for 261.0γ(above)-γ(below) the isomer in 1986Be07.
1970.25[b] *10*	$5/2^+$		
2195.75 *14*	$(3/2^-,5/2^-,7/2^-)$		
2386.10 *22*	$(3/2)^-$		
2424.33 *12*	$(3/2,5/2)^+$		
2447.60 *22*	(3/2,5/2,7/2)		
2573.93 *16*	$(5/2^-,7/2)$		
2579.39 *13*	$(3/2^-,5/2,7/2)$		
2683.63 *16*	(5/2,7/2)		
2892.68 *13*	$(3/2,5/2)^+$		
2951.16 *16*	$5/2^-$		

[†] From least-squares fit to Eγ.

[‡] From Adopted Levels, unless otherwise stated.

[#] configuration=configuration=$\pi(h^{+1}_{9/2})$.

[@] configuration=configuration=$\pi(f^{+1}_{7/2})$.

[&] configuration=$\pi(s^{+1}_{1/2})$.

[a] configuration=$\pi(d^{+1}_{3/2})$.

[b] configuration=$\pi(d^{+1}_{5/2})$.

ε,$β^+$ radiations

E(decay)	E(level)	Iε[†]	Log *ft*	I(ε+$β^+$)[†]	Comments
(592 *11*)	2951.16	0.91 *18*	6.85 *9*	0.91 *18*	εK=0.7630 *11*; εL=0.1768 *8*; εM+=0.0602 *4*
(650 *11*)	2892.68	1.37 *13*	6.77 *5*	1.37 *13*	εK=0.7680 *9*; εL=0.1732 *7*; εM+=0.05879 *25*
(859 *11*)	2683.63	1.75 *14*	6.93 *5*	1.75 *14*	εK=0.7798 *5*; εL=0.1648 *4*; εM+=0.05542 *13*
(964 *11*)	2579.39	2.62 *17*	6.86 *4*	2.62 *17*	εK=0.7835 *4*; εL=0.1621 *3*; εM+=0.05435 *10*
(969 *11*)	2573.93	0.73 *7*	7.42 *5*	0.73 *7*	εK=0.7837 *4*; εL=0.16201 *25*; εM+=0.05430 *10*

Continued on next page (footnotes at end of table)

^{205}Po ε decay 1972Al25 (continued)

ε,β+ radiations (continued)

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(1095 *11*)	2447.60		0.76 *8*	7.52 *5*	0.76 *8*	εK=0.7871 *3*; εL=0.15955 *19*; εM+=0.05332 *8*
(1119 *11*)	2424.33		3.43 *21*	6.89 *4*	3.43 *21*	εK=0.7877 *3*; εL=0.15917 *18*; εM+=0.05316 *8*
(1157 *11*)	2386.10		2.08 *19*	7.13 *5*	2.08 *19*	εK=0.7885 *3*; εL=0.15857 *17*; εM+=0.05292 *7*
(1347 *11*)	2195.75		1.01 *14*	7.59 *7*	1.01 *14*	εK=0.7918 *2*; εL=0.1561 *2*; εM+=0.05195 *5*
(1573 *11*)	1970.25	0.0058 *7*	6.5 *5*	6.92 *4*	6.5 *5*	av Eβ=270.6 *50*; εK=0.7941; εL=0.1539 *1*; εM+=0.05108 *4*
(1834 *11*)	1709.18	0.065 *6*	15.9 *13*	6.67 *4*	16.0 *13*	av Eβ=386.6 *49*; εK=0.79400 *8*; εL=0.1517 *1*; εM+=0.05023 *4*
(2056 *11*)	1486.64	0.027 *4*	2.8 *4*	7.53 *7*	2.8 *4*	av Eβ=483.8 *49*; εK=0.7910 *3*; εL=0.1497 *1*; εM+=0.04951 *4*
(2207‡ *11*)	1336.25	≤0.008	≤0.5	≥8.3	≤0.5	av Eβ=549.6 *48*; εK=0.7873 *4*; εL=0.1483 *2*; εM+=0.04898 *4*
(2304 *11*)	1239.12	0.091 *7*	4.4 *3*	7.44 *4*	4.5 *3*	av Eβ=592.0 *48*; εK=0.7840 *5*; εL=0.1472 *2*; εM+=0.04861 *5*
(2542 *11*)	1001.22	1.36 *7*	37.5 *18*	6.59 *3*	38.9 *19*	av Eβ=696.0 *49*; εK=0.7732 *6*; εL=0.14427 *15*; εM+=0.04759 *6*
(2671 *11*)	872.39	0.09 *7*	1.9 *14*	7.9 *4*	2.0 *15*	av Eβ=752.5 *49*; εK=0.7656 *7*; εL=0.14243 *17*; εM+=0.04696 *6*
(2693 *11*)	849.84	0.67 *9*	13.6 *17*	7.09 *6*	14.3 *18*	av Eβ=762.3 *49*; εK=0.7641 *8*; εL=0.14209 *17*; εM+=0.04684 *6*

† For absolute intensity per 100 decays, multiply by 0.99960 *12*.
‡ Existence of this branch is questionable.

γ(^{205}Bi)

Iγ normalization: From the decay scheme and ΣI$_i$(γ+ce)(g.s.)=100% by assuming no direct feeding to the ground state. Other: 0.35 *4* based on K x ray intensity (1972Al25).

x-ray	measured intensity (1972Al25) a)
Bi-Kα_1 x ray	135 15

a) For absolute intensity per 100 decays, multiply by 0.368 8.

E$_\gamma$ †	I$_\gamma$ †@	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	δ	α&	Comments
(10.6)		1497.17	1/2$^+$	1486.64	3/2$^-$,5/2$^-$				
22.6 *2*	0.079 *13*	872.39	5/2$^-$	849.84	7/2$^-$	[M1]		151 *5*	%Iγ=0.029 *5* α(L)=115 *4*; α(M)=27.2 *9* α(N)=6.95 *21*; α(O)=1.42 *5*; α(P)=0.169 *6* I$_\gamma$: From the measured Ice=1.9 *3* for E(ce)=18.7 *2* keV (22.6 keV ce(M1) line) in 1972Al25, and by assuming a pure M1 transition multipolarity.
24.9 *2*	2.0 *6*	1497.17	1/2$^+$	1472.21	1/2$^-$	[E1]		3.98 *11*	%Iγ=0.74 *23* α(L)=3.02 *8*; α(M)=0.746 *20* α(N)=0.183 *5*; α(O)=0.0321 *9*; α(P)=0.00252 *6* I$_\gamma$: From the measured Ice=0.7 *2* for E(ce)=21.2 *2* keV (24.9 keV ce(M1)+ce(M2) line) in 1972Al25, and by assuming a pure E1 transition multipolarity.
x122.7# *1*	0.07# *5*								%Iγ=0.026 *19*
128.9 *1*	3.0 *2*	1001.22	7/2$^-$	872.39	5/2$^-$	M1(+E2)	≤0.2	4.89 *9*	%Iγ=1.10 *8* α(K)=3.95 *9*; α(L)=0.718 *18*; α(M)=0.170 *5* α(N)=0.0434 *13*; α(O)=0.00884 *22*; α(P)=0.001037 *17* Mult.: α(K)exp=4.7 *4* (1972Al25); α(K)exp=5.6 *12* and K/L=6 (1969Al10); α(L)exp=0.69 and α(M)exp=0.20 (1969Ho37). δ: From α(K)exp, α(L)exp and K/L in 1972Al25, 1969Al10 and 1969Ho37, using the BrIccMixing program.
150.4 *1*	0.9 *2*	1486.64	3/2$^-$,5/2$^-$	1336.25	5/2$^-$	M1(+E2)	≤0.5	2.99 *20*	%Iγ=0.33 *8* α(K)=2.36 *23*; α(L)=0.48 *3*; α(M)=0.115 *9* α(N)=0.0294 *22*; α(O)=0.0059 *4*; α(P)=0.000668 *11* Mult.: α(K)exp=2.4 *7* (1972Al25) and 3.0 *8* (1969Al10). γ(θ) in 1983He09. δ: From α(K)exp in 1972Al25 and 1969Al10 using the BrIccMixing program.

$^{205}_{83}$Bi$_{122}$-3

^{205}Po ε decay 1972Al25 (continued)

γ(^{205}Bi) (continued)

E_γ[†]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α[&]	Comments
151.4 *1*	3.6 *2*	1001.22	7/2⁻	849.84	7/2⁻	M1+E2	0.51 *15*	2.74 *19*	%Iγ=1.32 *8* α(K)=2.08 *22*; α(L)=0.50 *3*; α(M)=0.121 *8* α(N)=0.0310 *21*; α(O)=0.0061 *4*; α(P)=0.000659 *11* Mult.: α(K)exp=2.0 *2* (1972Al25); α(K)exp=3.1 *6* and K/L=6 (1969Al10); α(L)exp=0.54 and α(M)exp=0.11 (1969Ho37). δ: From α(K)exp, α(L)exp and α(M)exp in 1972Al25 and 1969Ho37, using the BrIccMixing program.
[x]158.4 *1*	0.42 *5*					M1(+E2)		2.75	%Iγ=0.155 *19* α(K)=2.24 *4*; α(L)=0.391 *6*; α(M)=0.0919 *13* α(N)=0.0235 *4*; α(O)=0.00480 *7*; α(P)=0.000572 *8* Mult.: α(K)exp=1.9 *4* (1972Al25).
193.8 *5*	0.077 *14*	1044.03	(9/2)⁻	849.84	7/2⁻	(M1)		1.557 *25*	%Iγ=0.028 *6* α(K)=1.268 *20*; α(L)=0.221 *4*; α(M)=0.0519 *9* α(N)=0.01328 *21*; α(O)=0.00271 *5*; α(P)=0.000323 *6* E_γ,I_γ: From adopted gammas.
212.0 *1*	9.7 *5*	1709.18	3/2⁺	1497.17	1/2⁺	M1+E2	+3.0 *4*	0.45 *3*	%Iγ=3.57 *20* α(K)=0.231 *25*; α(L)=0.1645 *24*; α(M)=0.0427 *6* α(N)=0.01087 *16*; α(O)=0.00205 *3*; α(P)=0.000177 *4* Mult.: α(K)exp=0.22 *2* (1972Al25); α(K)exp=0.25 *3*(1969Al10); α(K)exp=0.45, α(L)exp=0.33 and α(M)exp=0.074 (1969Ho37); γ(θ) in 1983He09. δ: From α(K)exp in 1972Al25 and 1969Al10 using the BrIccMixing program. The sign is from 1983He09.
222.5 *1*	0.49 *6*	1709.18	3/2⁺	1486.64	3/2⁻,5/2⁻	[E1]		0.0617	%Iγ=0.180 *23* α(K)=0.0501 *7*; α(L)=0.00888 *13*; α(M)=0.00209 *3* α(N)=0.000528 *8*; α(O)=0.0001046 *15*; α(P)=1.131×10^{-5} *16*
225.4 *2*	0.34 *4*	2195.75	(3/2⁻,5/2⁻,7/2⁻)	1970.25	5/2⁺	[E1]		0.0598	%Iγ=0.125 *15* α(K)=0.0486 *7*; α(L)=0.00860 *13*; α(M)=0.00202 *3* α(N)=0.000511 *8*; α(O)=0.0001013 *15*; α(P)=1.096×10^{-5} *16*
248.2 *1*	0.38 *6*	1044.03	(9/2)⁻	795.86	11/2⁻	M1+E2	1.2 *4*	0.45 *12*	%Iγ=0.140 *23* α(K)=0.32 *11*; α(L)=0.096 *6*; α(M)=0.0238 *8* α(N)=0.00608 *21*; α(O)=0.00119 *6*; α(P)=0.000120 *15* Mult.: α(K)exp=0.34 *8* (1972Al25) and 0.25 *15* (1969Al10). δ: From α(K)exp in 1972Al25 and 1969Al10 using the BrIccMixing program.

$^{205}_{83}Bi_{122}$-4

^{205}Po ε decay 1972Al25 (continued)

γ(^{205}Bi) (continued)

E_γ †	I_γ †@	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α&	Comments
261.0 *1*	10.9 *6*	1970.25	5/2$^+$	1709.18	3/2$^+$	M1+E2	0.33 *+16−24*	0.63 *5*	%Iγ=4.01 *24* α(K)=0.51 *5*; α(L)=0.094 *3*; α(M)=0.0221 *6* α(N)=0.00566 *14*; α(O)=0.00115 *4*; α(P)=0.000134 *7* Mult.: α(K)exp=0.44 *4* (1972Al25); α(K)exp=0.59 *6* (1969Al10); α(K)exp=0.58, α(L)exp=0.18, and α(M)exp=0.035 (1969Ho37); γ(θ) in 1983He09. δ: From α(K)exp in 1972Al25, 1969Al10 and 1969Ho37 using the BrIccMixing program.
335.0 *1*	0.5 *1*	1336.25	5/2$^-$	1001.22	7/2$^-$	M1(+E2)		0.343	%Iγ=0.18 *4* α(K)=0.280 *4*; α(L)=0.0483 *7*; α(M)=0.01134 *16* α(N)=0.00290 *4*; α(O)=0.000593 *9*; α(P)=7.06×10^{-5} *10*
x358.8 *1*	0.5 *1*					M1(+E2)		0.285	%Iγ=0.18 *4* α(K)=0.233 *4*; α(L)=0.0400 *6*; α(M)=0.00940 *14* α(N)=0.00240 *4*; α(O)=0.000491 *7*; α(P)=5.85×10^{-5} *9* Mult.: α(K)exp=0.19 *5* (1972Al25).
x381.8 *1*	0.4 *1*					M1(+E2)		0.241	%Iγ=0.15 *4* α(K)=0.197 *3*; α(L)=0.0338 *5*; α(M)=0.00794 *12* α(N)=0.00203 *3*; α(O)=0.000415 *6*; α(P)=4.94×10^{-5} *7* Mult.: α(K)exp=0.11 *3* (1972Al25).
454.1 *1*	0.5 *1*	2424.33	(3/2,5/2)$^+$	1970.25	5/2$^+$	M1(+E2)	≤0.5	0.140 *12*	%Iγ=0.18 *4* α(K)=0.114 *10*; α(L)=0.0200 *12*; α(M)=0.0047 *3* α(N)=0.00120 *7*; α(O)=0.000245 *15*; α(P)=2.90×10^{-5} *20* Mult.: α(K)exp=0.14 *3* (1972Al25). δ: From α(K)exp in 1972Al25 using the BrIccMixing program.
473.1 *1*	2.4 *2*	1970.25	5/2$^+$	1497.17	1/2$^+$	E2		0.0351	%Iγ=0.88 *8* α(K)=0.0241 *4*; α(L)=0.00829 *12*; α(M)=0.00208 *3* α(N)=0.000530 *8*; α(O)=0.0001027 *15*; α(P)=1.001×10^{-5} *14* Mult.: α(K)exp=0.032 *5* (1972Al25) and 0.031 *6* (1969Al10).
495.9 *2*	0.4 *2*	1497.17	1/2$^+$	1001.22	7/2$^-$	[E3]		0.1063	%Iγ=0.15 *8* α(K)=0.0546 *8*; α(L)=0.0385 *6*; α(M)=0.01007 *15* α(N)=0.00258 *4*; α(O)=0.000494 *7*; α(P)=4.52×10^{-5} *7*
x511.0‡ *5*	19‡ *3*								%Iγ=7.0 *12*
x559.2# *3*	0.2# *1*								%Iγ=0.07 *4*
599.8 *1*	7.1 *4*	1472.21	1/2$^-$	872.39	5/2$^-$	E2		0.0202	%Iγ=2.61 *16* α(K)=0.01479 *21*; α(L)=0.00405 *6*; α(M)=0.001000 *14* α(N)=0.000255 *4*; α(O)=5.00×10^{-5} *7*; α(P)=5.13×10^{-6} *8* Mult.: α(K)exp=0.012 *2* (1972Al25), 0.014 *3* (1969Al10) and 0.016 (1969Ho37).
614.2 *1*	4.3 *2*	1486.64	3/2$^-$,5/2$^-$	872.39	5/2$^-$	M1		0.0681	%Iγ=1.58 *9*

$^{205}_{83}Bi_{122}$-5

^{205}Po ε decay 1972Al25 (continued)

γ(^{205}Bi) (continued)

E_γ †	I_γ †@	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α&	Comments
									α(K)=0.0558 *8*; α(L)=0.00945 *14*; α(M)=0.00221 *4* α(N)=0.000566 *8*; α(O)=0.0001158 *17*; α(P)=1.382×10^{-5} *20* Mult.: α(K)exp=0.058 *6* (1972Al25), 0.065 *9* (1969Al10) and 0.079 (1969Ho37).
624.8 *1*	2.8 *2*	1497.17	1/2$^+$	872.39	5/2$^-$	M2		0.1750	%Iγ=1.03 *8* α(K)=0.1378 *20*; α(L)=0.0282 *4*; α(M)=0.00680 *10* α(N)=0.001747 *25*; α(O)=0.000356 *5*; α(P)=4.17×10^{-5} *6* Mult.: α(K)exp=0.13 *2* (1972Al25), 0.15 *2* (1969Al10) and α(K)exp=0.14 (1969Ho37).
x679.9# *2*	0.7# *3*								%Iγ=0.26 *11*
713.3 *2*	1.6 *2*	2683.63	(5/2,7/2)	1970.25	5/2$^+$				%Iγ=0.59 *8*
715.2 *2*	0.9 *1*	2424.33	(3/2,5/2)$^+$	1709.18	3/2$^+$	M1+E2	0.50 *14*	0.039 *3*	%Iγ=0.33 *4* α(K)=0.0321 *25*; α(L)=0.0056 *4*; α(M)=0.00131 *8* α(N)=0.000334 *21*; α(O)=6.8×10^{-5} *5*; α(P)=8.1×10^{-6} *6* Mult.: α(K)exp=0.032 *15* (1969Al10). δ: From α(K)exp in 1972Al25 using the BrIccMixing program.
x783.0 *2*	0.6 *2*					M1(+E2)		0.0362	%Iγ=0.22 *8* α(K)=0.0296 *5*; α(L)=0.00499 *7*; α(M)=0.001167 *17* α(N)=0.000298 *5*; α(O)=6.10×10^{-5} *9*; α(P)=7.29×10^{-6} *11* Mult.: α(K)exp=0.030 *16* (1972Al25).
795.9 *1*	2.1 *2*	795.86	11/2$^-$	0.0	9/2$^-$	M1+E2	0.9 *5*	0.024 *8*	%Iγ=0.77 *8* α(K)=0.020 *7*; α(L)=0.0035 *9*; α(M)=0.00082 *21* α(N)=0.00021 *6*; α(O)=4.3×10^{-5} *11*; α(P)=5.0×10^{-6} *14* Mult.: α(K)exp=0.020 *4* (1972Al25). δ: From α(K)exp in 1972Al25 using the BrIccMixing program.
836.8 *1*	52 *3*	1709.18	3/2$^+$	872.39	5/2$^-$	E1		0.00361	%Iγ=19.1 *12* α(K)=0.00300 *5*; α(L)=0.000467 *7*; α(M)=0.0001083 *16* α(N)=2.75×10^{-5} *4*; α(O)=5.59×10^{-6} *8*; α(P)=6.53×10^{-7} *10* Mult.: α(K)exp=0.0038 *3* (1972Al25); α(K)exp=0.0034 *3* (1969Al10); α(K)exp=0.0035, and α(L)exp=0.00093 (1969Ho37); γ(θ) in 1983He09.
849.8 *1*	69 *4*	849.84	7/2$^-$	0.0	9/2$^-$	M1+E2	+0.58 *18*	0.0243 *23*	%Iγ=25.4 *12* α(K)=0.0198 *19*; α(L)=0.0034 *3*; α(M)=0.00080 *7* α(N)=0.000205 *17*; α(O)=4.2×10^{-5} *4*; α(P)=5.0×10^{-6} *5* Mult.: α(K)exp=0.020 *2* (1972Al25); α(K)exp=0.020 *2* and K/L=6 (1969Al10); α(K)exp=0.023, α(L)exp=0.0043 and α(M)exp=0.00078 (1969Ho37); γ(θ) in 1983He09. δ: From α(K)exp and K/L in 1972Al25, 1969Al10, 1969Ho37, and γ(θ) in 1983He09 using the BrIccMixing program. The sign is from γ(θ) (1983He09).

$^{205}_{83}Bi_{122}$-6

^{205}Po ε decay 1972Al25 (continued)

γ(^{205}Bi) (continued)

E_γ[†]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α[&]	Comments
859.4 *2*	0.51 *15*	2195.75	(3/2$^-$,5/2$^-$,7/2$^-$)	1336.25	5/2$^-$	(M1)		0.0284	%Iγ=0.19 *6* α(K)=0.0233 *4*; α(L)=0.00391 *6*; α(M)=0.000915 *13* α(N)=0.000234 *4*; α(O)=4.78×10^{-5} *7*; α(P)=5.72×10^{-6} *8* Mult.: α(K)exp=0.04 *2* (1972Al25).
872.4 *1*	100	872.39	5/2$^-$	0.0	9/2$^-$	E2		0.00916	%Iγ=36.8 *8* α(K)=0.00716 *10*; α(L)=0.001519 *22*; α(M)=0.000366 *6* α(N)=9.34×10^{-5} *13*; α(O)=1.86×10^{-5} *3*; α(P)=2.04×10^{-6} *3* Mult.: α(K)exp=0.0070 (1972Al25); α(K)exp=0.0070 *7* and K/L=6 (1969Al10); α(K)exp=0.0076, α(L)exp=0.0016 and α(M)exp=0.00019 (1969Ho37); γ(θ) in 1983He09.
[x]959.9[#] *2*	0.6[#] *2*								%Iγ=0.22 *8*
1001.2 *1*	78 *4*	1001.22	7/2$^-$	0.0	9/2$^-$	M1+E2	−0.028 *12*	0.0192	%Iγ=28.7 *12* α(K)=0.01572 *22*; α(L)=0.00263 *4*; α(M)=0.000614 *9* α(N)=0.0001570 *22*; α(O)=3.21×10^{-5} *5*; α(P)=3.84×10^{-6} *6* Mult.: α(K)exp=0.013 *1* (1972Al25); α(K)exp=0.012 *1* and K/L=6 (1969Al10); α(K)exp=0.019, α(L)exp=0.0032 and α(M)exp=0.00052 (1969Ho37); γ(θ) in 1983He09. δ: From α(K)exp and K/L in 1972Al25 and 1969Al10, and γ(θ) in 1983He09 using the BrIccMixing program. The sign is from γ(θ) (1983He09).
[x]1026.8[#] *3*	0.3[#] *1*								%Iγ=0.11 *4*
1044.0 *1*	1.7 *2*	1044.03	(9/2)$^-$	0.0	9/2$^-$	E2(+M1)		0.01721	%Iγ=0.63 *8* α(K)=0.01413 *20*; α(L)=0.00236 *4*; α(M)=0.000551 *8* α(N)=0.0001409 *20*; α(O)=2.88×10^{-5} *4*; α(P)=3.45×10^{-6} *5* Mult.: α(K)exp=0.006 *2* (1972Al25).
[x]1060.5[#] *4*	0.3[#] *2*								%Iγ=0.11 *8*
[x]1103.2[#] *3*	0.4[#] *3*								%Iγ=0.15 *11*
1120.6[#] *2*	0.3[#] *2*	1970.25	5/2$^+$	849.84	7/2$^-$	[E1]		0.00213	%Iγ=0.11 *8* α(K)=0.001775 *25*; α(L)=0.000271 *4*; α(M)=6.27×10^{-5} *9* α(N)=1.597×10^{-5} *23*; α(O)=3.25×10^{-6} *5*; α(P)=3.83×10^{-7} *6*; α(IPF)=1.60×10^{-6} *3*

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^{205}Po ε decay 1972Al25 (continued)

γ(^{205}Bi) (continued)

E_γ[†]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α[&]	Comments
1183.5 *1*	3.3 *3*	2892.68	(3/2,5/2)$^+$	1709.18	3/2$^+$	M1(+E2)	≤0.6	0.0115 *10*	%Iγ=1.21 *12* α(K)=0.0094 *9*; α(L)=0.00158 *13*; α(M)=0.00037 *3* α(N)=9.4×10^{-5} *8*; α(O)=1.93×10^{-5} *16*; α(P)=2.30×10^{-6} *20*; α(IPF)=4.5×10^{-6} *3* Mult.: α(K)exp=0.009 *2* (1972Al25) and 0.011 *2* (1969Al10). δ: From α(K)exp in 1972Al25 using the BrIccMixing program.
x1187.2# *6*	0.3# *1*								%Iγ=0.11 *4*
1195.0# *4*	0.6# *3*	2195.75	(3/2$^-$,5/2$^-$,7/2$^-$)	1001.22	7/2$^-$				%Iγ=0.22 *11*
x1211.4# *5*	0.14# *10*								%Iγ=0.05 *4*
x1221.2# *3*	0.3# *2*								%Iγ=0.11 *8*
x1224.6# *4*	0.2# *1*								%Iγ=0.07 *4*
1239.1 *1*	12.5 *7*	1239.12	7/2$^-$	0.0	9/2$^-$	M1+E2	+0.11 *4*	0.01102 *17*	%Iγ=4.6 *3* α(K)=0.00905 *14*; α(L)=0.001502 *23*; α(M)=0.000351 *6* α(N)=8.98×10^{-5} *14*; α(O)=1.84×10^{-5} *3*; α(P)=2.20×10^{-6} *4*; α(IPF)=1.382×10^{-5} *21* Mult.: α(K)exp=0.007 *1* (1972Al25); α(K)exp=0.0066 *10* (1969Al10); α(K)exp=0.012 (1969Ho37); γ(θ) in 1983He09. δ: From α(K)exp in 1972Al25, 1969Al10 and 1969Ho37, and γ(θ) in 1983He09 using the BrIccMixing program. The sign is from γ(θ) (1983He09).
1242.3# *4*	1.0# *4*	2951.16	5/2$^-$	1709.18	3/2$^+$				%Iγ=0.37 *15*
x1267.3# *4*	0.6# *2*								%Iγ=0.22 *8*
x1276.6# *7*	0.3# *1*								%Iγ=0.11 *4*
x1301.9 *3*	0.6 *2*								%Iγ=0.22 *8*
x1309.7# *4*	0.3# *1*								%Iγ=0.11 *4*
1323.5 *3*	1.3 *1*	2195.75	(3/2$^-$,5/2$^-$,7/2$^-$)	872.39	5/2$^-$				%Iγ=0.48 *4*
1336.4 *3*	3.6 *3*	1336.25	5/2$^-$	0.0	9/2$^-$	E2		0.00405	%Iγ=1.32 *12* α(K)=0.00327 *5*; α(L)=0.000584 *9*; α(M)=0.0001380 *20* α(N)=3.52×10^{-5} *5*; α(O)=7.12×10^{-6} *10*; α(P)=8.17×10^{-7} *12*; α(IPF)=2.16×10^{-5} *3* Mult.: α(K)exp=0.002 *1* (1969Al10) and adopted gammas.
x1366.5‡ *8*	4.2‡ *6*								%Iγ=1.55 *23*
x1392.7 *3*	1.5 *2*								%Iγ=0.55 *8*
x1418.8# *3*	0.2# *1*								%Iγ=0.07 *4*

$^{205}_{83}Bi_{122}$-8

^{205}Po ε decay 1972Al25 (continued)

γ(^{205}Bi) (continued)

E_γ †	I_γ †@	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α&	Comments
x1422.3# 5	0.2# 1							%Iγ=0.07 4
x1454.4# 6	0.14# 8							%Iγ=0.05 3
x1470.9# 4	0.4# 1							%Iγ=0.15 4
x1486.5 4	0.4 1							%Iγ=0.15 4
x1487.1# 5	0.4# 1							%Iγ=0.15 4
1513.7 2	5.7 5	2386.10	(3/2)$^-$	872.39	5/2$^-$			%Iγ=2.10 19
x1520.1# 9	0.16# 10							%Iγ=0.06 4
x1529.6 3	0.6 2							%Iγ=0.22 8
x1546.1 4	0.7 1							%Iγ=0.26 4
1551.8 2	7.9 5	2424.33	(3/2,5/2)$^+$	872.39	5/2$^-$	[E1]	1.42×10^{-3}	%Iγ=2.91 20 α(K)=0.001017 15; α(L)=0.0001530 22; α(M)=3.53×10^{-5} 5 α(N)=8.99×10^{-6} 13; α(O)=1.83×10^{-6} 3; α(P)=2.18×10^{-7} 3; α(IPF)=0.000204 3
x1570.8 3	0.4 1							%Iγ=0.15 4
1575.2 2	2.1 2	2447.60	(3/2,5/2,7/2)	872.39	5/2$^-$			%Iγ=0.77 8
1578.4 2	1.7 2	2579.39	(3/2$^-$,5/2,7/2)	1001.22	7/2$^-$			%Iγ=0.63 8
x1610.9 2	0.7 2							%Iγ=0.26 8
x1622.8# 3	0.4# 1							%Iγ=0.15 4
x1638.4# 7	0.2# 1							%Iγ=0.07 4
x1674.1 2	0.7 2							%Iγ=0.26 8
1701.2 3	0.6 1	2573.93	(5/2$^-$,7/2)	872.39	5/2$^-$			%Iγ=0.22 4
1707.1 2	1.3 2	2579.39	(3/2$^-$,5/2,7/2)	872.39	5/2$^-$			%Iγ=0.48 8
1711.8 4	0.5 2	2951.16	5/2$^-$	1239.12	7/2$^-$			%Iγ=0.18 8
x1715.7 3	0.8 2							%Iγ=0.29 8
1724.1 2	0.9 1	2573.93	(5/2$^-$,7/2)	849.84	7/2$^-$			%Iγ=0.33 4
1729.2 2	4.2 3	2579.39	(3/2$^-$,5/2,7/2)	849.84	7/2$^-$			%Iγ=1.55 12
x1800.2 2	0.4 1							%Iγ=0.15 4
x1808.1 5	0.3 1							%Iγ=0.11 4
1811.3 2	3.2 3	2683.63	(5/2,7/2)	872.39	5/2$^-$			%Iγ=1.18 12
x1836.8# 3	0.3# 2							%Iγ=0.11 8
1950.0 2	0.5 1	2951.16	5/2$^-$	1001.22	7/2$^-$			%Iγ=0.18 4
x1954.1‡ 10	1.3‡ 2							%Iγ=0.48 8
x1957.5 2	0.7 1							%Iγ=0.26 4
2020.3 3	0.4 1	2892.68	(3/2,5/2)$^+$	872.39	5/2$^-$			%Iγ=0.15 4
x2036.6# 9	0.2# 1							%Iγ=0.07 4
2101.1 3	0.5 1	2951.16	5/2$^-$	849.84	7/2$^-$			%Iγ=0.18 4
x2126.2 2	0.6 1							%Iγ=0.22 4
x2168.9 2	1.0 1							%Iγ=0.37 4
x2170.7‡ 13	1.8‡ 3							%Iγ=0.66 12
x2174.7 3	0.6 1							%Iγ=0.22 4
x2190.1 6	0.21 5							%Iγ=0.077 19

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^{205}Po ε decay 1972Al25 (continued)

γ(^{205}Bi) (continued)

E_γ [†]	I_γ [†@]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]2223.8 *3*	0.7 *1*					%Iγ=0.26 *4*
[x]2256.5[#] *2*	0.10[#] *4*					%Iγ=0.037 *15*
[x]2265.1 *8*	0.25 *9*					%Iγ=0.09 *4*
[x]2268.2 *6*	0.4 *1*					%Iγ=0.15 *4*
[x]2298.6[#] *4*	0.2[#] *1*					%Iγ=0.07 *4*
[x]2320.6[#] *15*	0.2[#] *1*					%Iγ=0.07 *4*
[x]2338.3[#] *12*	0.3[#] *1*					%Iγ=0.11 *4*
[x]2342.6[#] *3*	0.1[#] *1*					%Iγ=0.04 *4*
[x]2425.1[‡] *14*	0.60[‡] *9*					%Iγ=0.22 *4*
[x]2432.4 *4*	0.3 *1*					%Iγ=0.11 *4*
2574.2 *3*	0.5 *1*	2573.93	(5/2$^-$,7/2)	0.0	9/2$^-$	%Iγ=0.18 *4*
[x]2694.7[#] *6*	0.09[#] *6*					%Iγ=0.033 *22*
[x]2769.5[#] *4*	0.20[#] *6*					%Iγ=0.074 *23*

[†] From 1972Al25, unless otherwise stated.
[‡] From 1969Ho37.
[#] Tentatively assigned in 1972Al25.
[@] For absolute intensity per 100 decays, multiply by 0.368 *8*.
[&] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[x] γ ray not placed in level scheme.

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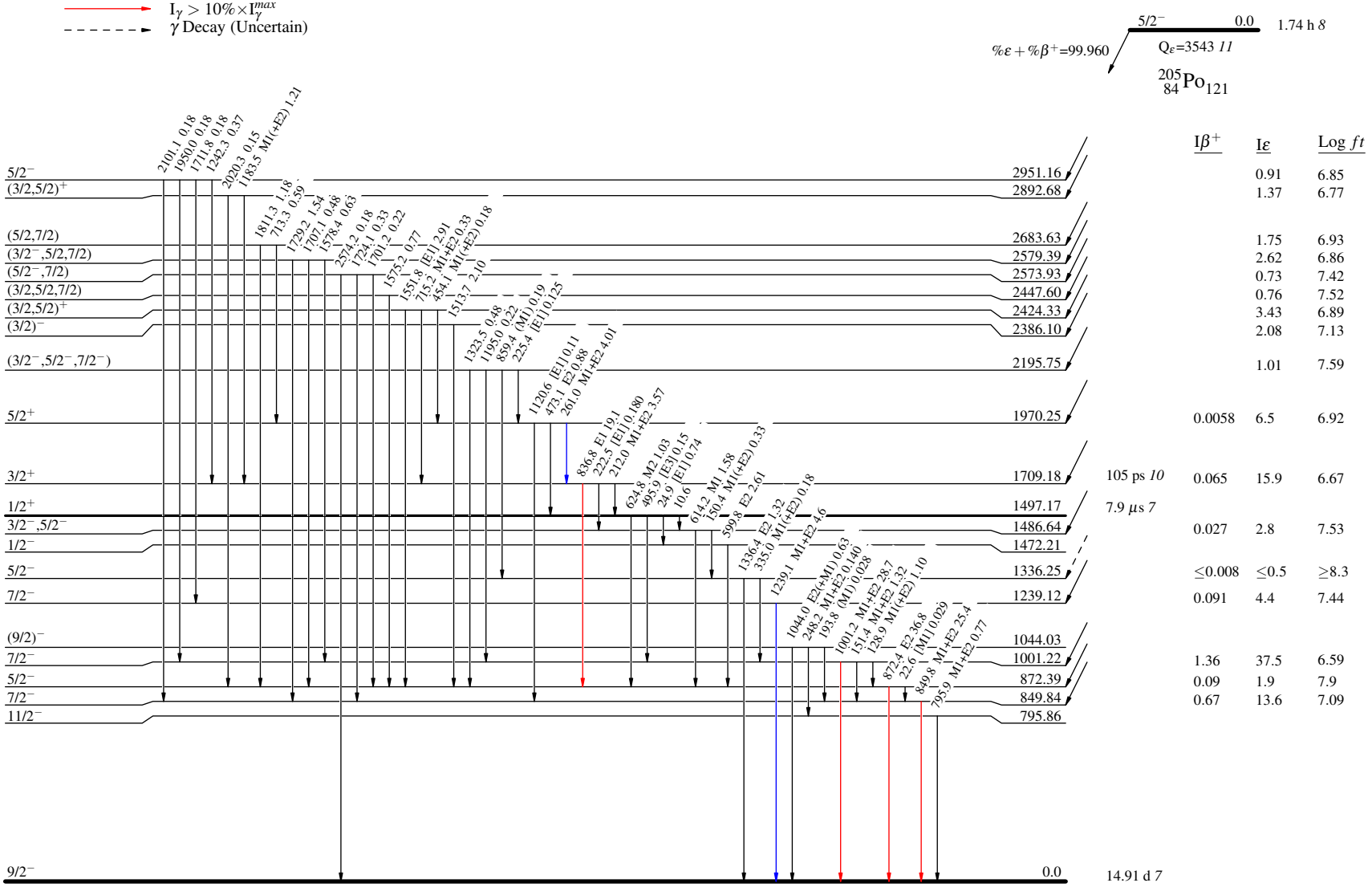
^{205}Po ε decay 1972Al25

Decay Scheme

Intensities: I_γ per 100 parent decays



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