^{197}Hg ε decay (23.8 h) 1993Ch44,1970Pl05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong, Zhou Chunmei	NDS 104, 283 (2005)	1-Jan-2002

Parent: ^{197}Hg: E=298.93; $J^{\pi}=13/2^{+}$; $T_{1/2}$=23.8 h *1*; Q(ε)=600 *3*; %ε decay=100.0

^{197}Hg-%ε decay: From 1993Ch44. Others: 0.065 *10* (1965Ha15), 0.070 *7* from (I(γ+ce)(202γ)+I(γ+ce)(279γ)+I(γ+ce)(409γ))/I(γ+ce)(134γ) with Iγ(202γ):Iγ(279γ):Iγ(409γ):Iγ(134γ)=0.20 *3*:14.4 *15*:0.021 *7*:100.

Sources produced by ^{197}Au(p,n) (1963Ti02), ^{197}Au(d,2n) (1941Sh08,1943Fr01), and α′s on Pt (1970Pl05).

^{197}Au Levels

E(level)†	J^{π}‡	$T_{1/2}$‡	Comments
0.0	$3/2^{+}$	stable	
77.349 *10*	$1/2^{+}$	1.91 ns *1*	
279.04 *7*	$5/2^{+}$	18.6 ps *15*	Branching: Iγ(202γ)/Iγ(279γ)=0.0146 *21* (1965Ha15), 0.016 *3* (1966Sm01), 0.0139 *25* (1970Pl05); see also Coul. ex.
409.17 *8*	$11/2^{-}$	7.73 s *6*	%IT=100

† From decay scheme and Eγ′s, using least-squares fit to data.

‡ From Adopted Levels.

ε radiations

E(decay)	E(level)	Iε†‡	Log *ft*	Comments
(490 *3*)	409.17	8.6 *7*	6.70 *4*	εK=0.7681 *4*; εL=0.1739 *3*; εM+=0.05791 *11* Iε: other: 7.5 *7* (1965Ha15).

† From γ intensity imbalance.

‡ Absolute intensity per 100 decays.

^{197}Hg ε decay (23.8 h) 1993Ch44,1970Pl05 (continued)

γ(^{197}Au)

Iγ normalization: From I(γ+ce)(202γ)+I(γ+ce)(279γ)+I(γ+ce)(409γ)=100.

E_γ[†]	I_γ[†‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ	α[†]	$I_{(\gamma+ce)}$[&]	Comments
(77.35 *1*)	0.47 *7*	77.349	1/2$^+$	0.0	3/2$^+$	M1+E2	−0.35 *1*	4.24 *7*	2.00 *30*	α(L)= 3.21 *6*; α(M)= 0.780 *14*; α(N+..)= 0.244 *5* I_γ: from I(γ+ce) and α. $I_{(\gamma+ce)}$: from intensity balance at the 77 level.
130.2 *1*	4.47 *15*	409.17	11/2$^-$	279.04	5/2$^+$	E3		30.3	140 *1*	α(K)= 1.027; α(L)= 21.48; α(M)= 5.89; α(N+..)= 1.886 E_γ: others: 130.2 (1953Mi22,1959Va13), 130.42 *7* (1972Wi21). I_γ: from I(γ+ce) and α. Others: 4.4 *3* (1966Sm01, ^{197}Au IT decay), ≈3.5 (1970Pl05). L1:L2:L3=5.6 *17*:100:61 *6* (1970Pl05), L2/L3=1.3 *1* (1959Va13), K/L=0.11 (1955Jo22).
201.8 *1*	1.46 *21*	279.04	5/2$^+$	77.349	1/2$^+$	E2		0.368		$I_{(\gamma+ce)}$: from intensity balance at the 279 level. α(K)= 0.1674; α(L)= 0.1500; α(M)= 0.0384; α(N+..)=0.01194 E_γ: other: 201.6 *3* (1971Mc14, Coul. ex.). I_γ: from 1965Ha15. Others (Coul. ex.): 1.42 (1970Sh12), 1.50 *12* (1971Mc14). Mult.: from γ(θ) 1971Mc14, Coul. ex.
279.0 *1*	100	279.04	5/2$^+$	0.0	3/2$^+$	M1+E2	−0.40 *4*	0.380 *7*		α(K)= 0.308 *7*; α(L)= 0.0548 *4*; α(M)=0.01279 *8*; α(N+..)=0.00400 E_γ: other: 279.01 *5* (1972Wi21) semi. δ: from γ(θ) 1971Mc14, Coul. ex. Other: 0.45 *4* from L1:L2:L3 (1970Pl05). L1:L2:L3=100:17.9 *27*:4.8 *7* (1970Pl05); K/L=5.3 (1955Jo22), 4.8 *5* (1970Sh10). α(K)exp=0.29 *3* (1955Jo22). Other: 1965He04.
409.1 *1*	0.15 *5*	409.17	11/2$^-$	0.0	3/2$^+$	(M4)		3.97		α(K)= 2.413; α(L)= 1.154; α(M)= 0.306; α(N+..)= 0.0982 I_γ: other: 0.12 *3* from ce(K)(409γ,M4)/ce(L)(279γ,M1+E2)=0.054 *11*. α(K)exp=2.0 *8* (1970Pl05).

[†] From 1970Pl05, except as noted.
[‡] Relative intensity normalized to Iγ(279γ)=100.
[#] Based on α(K)exp, K/L, L-subshell ratio data, except as noted.
[@] For absolute intensity per 100 decays, multiply by 0.061 *5*.
[&] For absolute intensity per 100 decays, multiply by 0.709 *5*.

$^{197}_{79}Au_{118}$-2

^{197}Hg ε decay (23.8 h) 1993Ch44,1970Pl05

Decay Scheme

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