^{197}Hg IT decay (23.8 h)

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 *8*; $J^\pi=13/2^+$; $T_{1/2}$=23.8 h *1*; %IT decay=91.4 *7*

^{197}Hg-%IT decay: From 1993Ch44. Others: 0.930 *7* from ε/IT decay from Iγ(279γ)/Iγ(134γ)=0.144 *15* (1970Pl05) and ^{197}Au level intensity balance; 0.935 *10* (1965Ha15).

Sources produced by ^{196}Hg(n,γ) (1987Vi08,1986Hi05), ^{197}Au(p,n) (1984BeZP,1986LoZX), ^{197}Au(d,2n) (1980He05,1980Kr12), ^{198}Hg(p,d) (1986VeZY), Pt(α,xn) (1983Li21), and ^{197}Au(α,d2n) (1993Ch44).

^{197}Hg Levels

E(level)†	J^π	$T_{1/2}$‡	Comments
0.0	$1/2^-$	64.14 h *5*	μ=+0.5273741 *9* (1978LeZA) optical pumping. Other: 1976Fu06.
133.98 *5*	$5/2^-$	8.07 ns *16*	$T_{1/2}$: 8.07 ns *16* (1977Kr11) (ce)(γ)(t). Others: 8 ns *1* (1950De06), 7 ns *1* (1950Mc12), 7.0 ns *2* (1961Su11), 7.3 ns *2* (1970Ge01), 7.0 ns *2* (1971Ba71), 8.2 ns *3* (1972Ko25). g-factor: +0.342 *6* (1970Ge01,1977Kr11) recalculated for $T_{1/2}$ dependence. Other: 0.45 *13* (1972Ko25). Q=−0.081 *6* (1980He05,1980Kr12,1981Kr16) from time-dependent perturbed angular correlation. Other: 0.47 *6* (1977Vi01). 1980He05, 1980Kr12, and 1981Kr16 discuss discrepancy in Q($5/2^-$,^{197}Hg) measurements, in addition to deviation from Q($5/2^-$,^{199}Hg)=+0.95 *7*.
298.93 *8*	$13/2^+$	23.8 h *1*	%IT=91.4 *7* (1993Ch44); %ε=8.6 *7*(1993Ch44) $\gamma\gamma(\theta)$,ce$\gamma(\theta)$,(ce)(ce)(θ): 1950Wa75, 1956Br65, 1956Gi33, 1957Co49, 1961Pe06, 1962Ge10, 1970Ch24, 1972Ba39; A_2 coef determined.

† From decay scheme and least-squares fit to Eγ's.

‡ From Adopted Levels, except as noted.

γ(^{197}Hg)

Iγ normalization: For I(γ+ce)=100 to g.s., α(134γ,E2)=1.73.

E_γ	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.†	α#	Comments
133.98 *5*	100	133.98	$5/2^-$	0.0	$1/2^-$	E2	1.73	α(K)= 0.421; α(L)= 0.975; α(M)= 0.253; α(N+..)= 0.0798 E_γ: from 1974HeYW. Others: 133.94 *5* (1961Ju05), 134.0 *1* (1970Pl05), 133.88 *5* (1972Wi21), 133.99 *7* (1979Br12). L1:L2:L3=26 *3*:145 *9*:100 *5* (1959Va13), 17 *4*:132 *14*:100 (1970Pl05), 26 *3*:137 *10*:100 (1972Pa40). K/L=0.42 (1951Hu17), 0.46 *2* (1959Va13).
164.97 *7*	0.782	298.93	$13/2^+$	133.98	$5/2^-$	M4	348	α(K)= 77.0; α(L)= 191.9; α(M)= 59.1; α(N+..)= 20.12 E_γ: from 1972Wi21. Others: 165.0 *1* (1970Pl05), 164.75 *15* (1974HeYW). I_γ: from I(γ+ce)(134γ,E2)=I(γ+ce)(165γ,M4). Others: 0.95 *10* (1965Ha15), 0.6 *2* (1967Bu22), 0.93 *10* (1970Pl05), 0.99 *7* (1977Re03), 0.72 (1951Hu17) from I(ce(K) 165γ)/I(ce(K) 134γ)=1.45. L1:L2:L3=54 *3*:13 *1*:100 *3* (1959Va13), 58 *6*:13 *3*:100 (1970Pl05), 59.1 *16*:14.4 *3*:100 (1972Br02).

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^{197}Hg IT decay (23.8 h) (continued)

$\gamma(^{197}Hg)$ (continued)

E_γ	E_i(level)	Comments
		K/L=0.44 (1951Hu17), 0.25 (1952Co01), 0.28 *1* (1959Va13). α(exp)=340 *5* (1987Vi08), 350 *90* (1957Co49), 275 *19* (1977Re03); α(K)exp=47 *12* (1977Re03).

† Deduced from ce-ratio data.
‡ For absolute intensity per 100 decays, multiply by 0.3348 *26*.
# 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.

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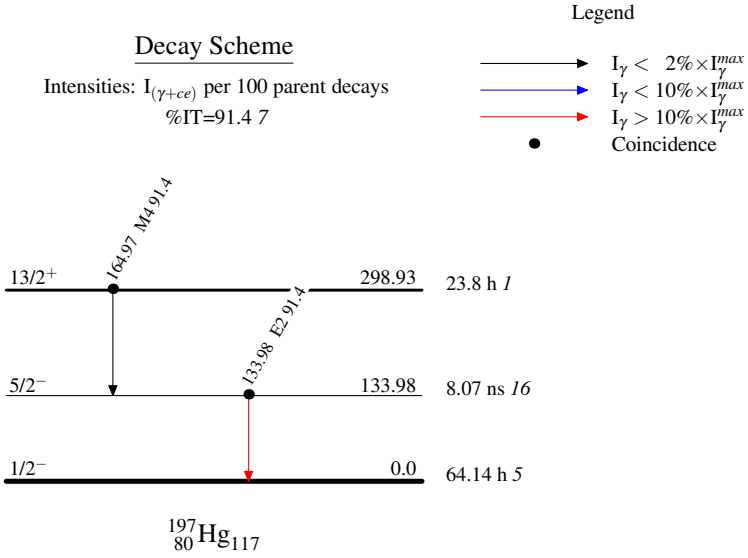
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=91.4 *7*



$^{197}_{80}Hg_{117}$