^{199}Hg IT decay (42.67 min) 2001Li17,1971Ka24,1969Kl06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 108, 79 (2007)	15-Oct-2006

Parent: ^{199}Hg: E=532.48 *10*; $J^{\pi}=13/2^{+}$; $T_{1/2}$=42.67 min *9*; %IT decay=100.0

^{199}Hg-%IT decay: $\%\beta^{-}=0$, estimated from log *ft* systematics.

Others: 1968Bo28, 1965Sm02, 1959So11, 1955Bo29, 1948Ho37, 1948Mo33, 1937Mc04, 1937He04.

^{199}Hg isomer Produced by ^{200}Hg(n,2n) E(n)=14 MeV (1971Ka24), by (γ,γ') (2001Li17).

^{199}Hg Levels

E(level)†	J^{π}‡	$T_{1/2}$	Comments
0.0	$1/2^{-}$		
158.3 *1*	$5/2^{-}$	2.47 ns *5*	$T_{1/2}$: from $\gamma\gamma(\theta,t)$ (1975Ed01). Q(^{199}Hg)/Q(^{197}Hg)=11.8 *3* (1980He05).
413.84 *5*	$5/2^{-}$		
532.48 *10*	$13/2^{+}$	42.67 min *9*	$T_{1/2}$: from isomer produced In (γ,γ') excitation (2001Li17). Others: 42.6 min *2* (1969Kl06), 39.7 min *6* (1968Bo28), 43.0 min *5* (1965Sm02), 42 min *1* (1955Bo29), 44.4 min *5* (1948Mo33), 43 min *1* (1948Ho37,1937Mc04, 1937He04).

† From Eγ's.

‡ From 'Adopted Levels'.

γ(^{199}Hg)

Iγ normalization: From intensity balance.
γγ(θ): 1956Po14.

E_γ [†]	I_γ [#]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	δ	α [@]	$I_{(\gamma+ce)}$ [#]	Comments
(118.6)		532.48	13/2$^+$	413.84	5/2$^-$	[M4]		2310	0.054 *4*	ce(K)/(γ+ce)=0.0739; ce(L)/(γ+ce)=0.642; ce(M)/(γ+ce)=0.210; ce(N+)/(γ+ce)=0.0732 $I_{(\gamma+ce)}$: from intensity balance; I(γ+ce) and α give Iγ≈2×10^{-5}.
158.3 *1*	100	158.3	5/2$^-$	0.0	1/2$^-$	E2		0.914		α(K)= 0.296; α(L)= 0.461; α(M)= 0.1193; α(N+..)= 0.0374
(255.0)	<0.005	413.84	5/2$^-$	158.3	5/2$^-$					I_γ: from 1971Ka24.
374.1 *1*	26.3 *20*	532.48	13/2$^+$	158.3	5/2$^-$	M4+E5	+0.092 *15*	6.0		α(K)= 3.55; α(L)= 1.95; α(M)= 0.527; α(N+..)= 0.171 I_γ: average of 29.0 (1971Ka24) and 23.6 *24* (1969Kl06). Mult.: from α(K)exp=3.51 *28*, α(K)exp/(α(exp)-α(K)exp)=1.32 *4* (1969Kl06); theory (M4): α(K)=3.58, α(K)/(α-α(K))=1.34. Also 1965Sm02, 1956Po14. δ: γγ(θ) (1975Ed01).
413.4 *2*	0.052 *4*	413.84	5/2$^-$	0.0	1/2$^-$	E2		0.0437		α(K)=0.0298; α(L)=0.0105; α(M)=0.00261; α(N+..)=0.00082 E_γ: from 1971Ka24. I_γ: based upon Iγ(374γ)/Iγ(414γ)=502 *35* (1971Ka24).

[†] From 1969Kl06, unless otherwise noted.
[‡] From 'adopted gammas', unless otherwise noted.
[#] For absolute intensity per 100 decays, multiply by 0.523 *10*.
[@] 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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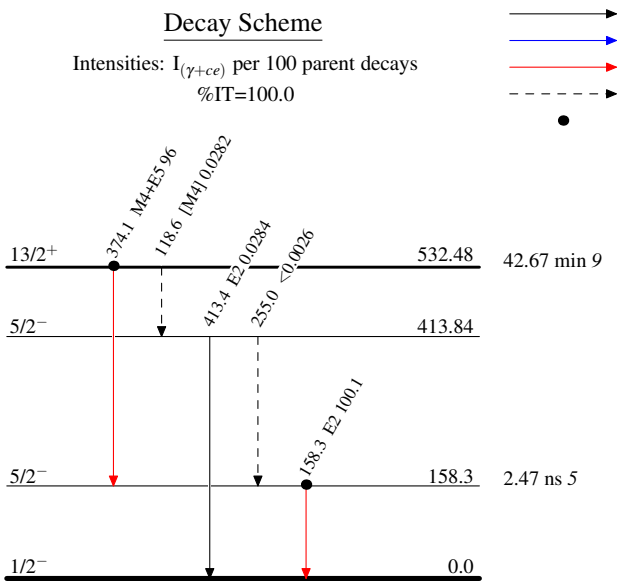
Legend

Decay Scheme

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

%IT=100.0



$^{199}_{80}Hg_{119}$