^{197}Pt β^- decay (95.41 min) 1965Ha15

History

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

Parent: ^{197}Pt: E=399.59; J^π=13/2$^+$; $T_{1/2}$=95.41 min *18*; Q(β^-)=718.7 *6*; %β^- decay=3.3 *4*
^{197}Pt-%β^- decay: From (I(γ+ce)(279γ)+I(γ+ce)(202γ))/I(γ+ce)(346γ) and Iγ(346γ):Iγ(279γ):Iγ(202γ)=100:0.21 *2*:0.0031 *12*.
Others: 1964Gr02, 1973Ba66.
Sources produced by ^{196}Pt(n,γ) (1965Ha15) and ^{196}Pt(d,p) (1941Sh08).

^{197}Au Levels

E(level)†	J^π†	$T_{1/2}$†	Comments
0.0	3/2$^+$	stable	
77.0 *8*	1/2$^+$	1.91 ns *1*	
279.0 *7*	5/2$^+$	18.6 ps *15*	
409.0 *8*	11/2$^-$	7.73 s *6*	%IT=100

† From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-†‡	Log *ft*	Comments
(709.3 *10*)	409.0	3.3 *4*	6.75 *6*	av Eβ=221.76 *22*

† From γ intensity imbalance.
‡ For absolute intensity per 100 decays, multiply by 0.033 *4*.

γ(^{197}Au)

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

X-ray intensities

Radiations	E, Kev a	Intensities ab
Au L x-ray	9.710	1.13 *17*
Au ka2 x-ray	66.9895 *8*	0.24 *3*
Au ka1 x-ray	68.8037 *8*	0.40 *5*
Au kb x-ray	78.00	0.177 *20*

a, Calculated values
b, values per 100 parent decays

E$_\gamma$	I$_\gamma$†‡#	E$_i$(level)	J^π_i	E$_f$	J^π_f	Mult.†	δ†	α@	I$_{(\gamma+ce)}$#	Comments
(77)	0.47 *7*	77.0	1/2$^+$	0.0	3/2$^+$	M1+E2	−0.35 *1*	4.31 *8*	2.00 *30*	α(L)= 3.26 *6*; α(M)= 0.793 *15*; α(N+..)= 0.248 *5* I$_\gamma$: from I(γ+ce) and α. I$_{(\gamma+ce)}$: from intensity balance at the 77 level.

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^{197}Pt β^- decay (95.41 min) 1965Ha15 (continued)

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

E_γ	I_γ [†‡#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]	α[@]	$I_{(\gamma+ce)}$[#]	Comments
(130)	4.47 *15*	409.0	11/2$^-$	279.0	5/2$^+$	E3		30.5	140 *1*	α(K)= 1.028; α(L)= 21.66; α(M)= 5.95; α(N+..)= 1.902 α(exp)=29.4 *50* (1983La26) E_γ: obscured by 129.8γ via ^{195}Pt IT decay. I_γ: from I(γ+ce) and α. $I_{(\gamma+ce)}$: from intensity balance at the 279 level.
202	1.46 *21*	279.0	5/2$^+$	77.0	1/2$^+$	E2		0.367		α(K)= 0.1670; α(L)= 0.1494; α(M)= 0.0382; α(N+..)=0.01189 I_γ: from Iγ/Iγ(279γ) in ^{197}Hg ε decay (23.8 h). Other: ≤5 (1965Ha15).
279	100	279.0	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
(409)	0.15 *5*	409.0	11/2$^-$	0.0	3/2$^+$	M4		3.97		α(K)= 2.415; α(L)= 1.155; α(M)= 0.306; α(N+..)= 0.0983 I_γ: from Iγ/Iγ(130γ) in ^{197}Hg ε decay (23.8 h) based on ce ratios and known multipolarities.

[†] Established via Coul. ex., Mossbauer, decay studies.
[‡] Relative intensity normalized to Iγ(279γ)=100.
[#] For absolute intensity per 100 decays, multiply by 0.024 *6*.
[@] 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