^{197}Tl ε decay (2.84 h) 1961Ju05,1973Va26,1979Br12

History

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

Parent: ^{197}Tl: E=0.0; $J^\pi=1/2^+$; $T_{1/2}$=2.84 h *4*; Q(ε)=2200 *17*; %ε+%$β^+$ decay=100.0

Sources produced by Pb(p,X), isotope separated (1973Va26); W(^{16}O,pxn) mass and radiochemically separated (1979Br12); ^{197}Au(α,4n) (1978Li10); protons on Hg (1973Va26).

Others: 1957An53, 1958An52, 1966Vi01, 1979CoZI.

1961Ju05: measured Eγ, Iγ, I(ce), γγ and γce.

1973Va26: measured Eγ, Iγ, I(ce), γγ.

1979Br12: measured Eγ, Iγ, I(ce), I(x ray), γγ, γX, α, $T_{1/2}$.

1993Ch44: measured Iγ for 18.18γ, 133.9γ and 152.16γ.

^{197}Hg Levels

E(level)†	J^π‡	Comments
0.0	$1/2^-$	
133.96 *4*	$5/2^-$	
152.14 *4*	$(3/2)^-$	
307.78 *6*	$(5/2)^-$	Branching: Iγ(307.8γ)/Iγ(174γ)=5.8 *11* (1979Br12), 4.3 *12* (α,2nγ).
308.50 *6*	$(3/2^-)$	Branching: Iγ(156.4γ)/Iγ(308.6γ)=0.14 *4* (1979Br12).
557.75 *12*	$(5/2^-,7/2^-)$	Branching: Iγ(249γ)/Iγ(423γ)=0.37 *7* (1979Br12).
578.01 *6*	$(3/2)^-$	Branching: Iγ(270γ):Iγ(426γ):Iγ(444γ):Iγ(578γ)=4.0 *4*:100:4.4 *4*:34 *3* (1979Br12), 4.8 *5*:100:3.8 *4*:28 *2* (1973Va26).
585.38 *6*	$(3/2)^-$	Branching: Iγ(278γ):Iγ(433γ):Iγ(451γ):Iγ(585γ)=10.5 *10*:100:42 *4*:20 *2* (1979Br12), 14 *2*:100:43 *6*: <35 (1973Va26).
676.75 *24*	$1/2^-,3/2^-$	
792.04 *5*	$1/2^-,3/2^-$	Branching: Iγ(484γ):Iγ(640γ):Iγ(658γ):Iγ(792γ)=14 *1*:49 *6*:5.9 *8*:100 (1979Br12), 17 *2*:59 *8*:6.8 *11*:100 (1973Va26).
892.53 *6*	$(3/2)^-$	Branching: Iγ(585γ):Iγ(759γ):Iγ(892γ)=37 *5*:10.2 *12*:100 (1979Br12).
982.89 *7*	$1/2^-,3/2^-$	Branching: Iγ(397γ):Iγ(405γ):Iγ(674γ):Iγ(831γ):(983γ)=6.8 *9*:14.4 15:100:3.5 5l86 9 (1979Br12), 11 *3*:21 *4*:100:–:82 *11* (1973Va26).
1009.33 *7*	$(1/2^-)$	Branching: Iγ(701γ):Iγ(857γ):Iγ(1009γ)=50 *6*:100:19 *2* (1979Br12), 56 *7*:100:19 *3* (1973Va26).
1145.24 *17*	$(1/2^-,3/2^-)$	
1437.64 *6*	$1/2^-,3/2^-$	Branching: Iγ(545γ):Iγ(645γ):Iγ(852γ):Iγ(1130γ):Iγ(1285γ):Iγ(1438γ)= 16 *2*:18 *3*:3.4 *12*:7.5 *11*:100:72 *8* (1979Br12), 18 *4*:20 *6*: <14:–:100:71 *11* (1973Va26).
1563.43 *6*	$1/2^-,3/2^-$	Branching: Iγ(771γ):Iγ(1254γ):Iγ(1256γ):Iγ(1411γ):Iγ(1429γ)= 1.9 *3*:10 *2*:7 *2*:100:19 *2* (1979Br12), 1.8 *4*: <18: <18:100:18 2 (1973Va26).
1693.72 *6*	$1/2^{(-)},3/2^{(-)}$	Branching: Iγ(902γ):Iγ(1108γ):Iγ(1385γ):Iγ(1542γ):Iγ(1694γ)=30 3:7.3 *15*:100:17 *2*:55 *6* (1979Br12), 20 *6*:11 *3*:100:17 *3*:53 *8* (1973Va26).

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

‡ From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iε†	Log *ft*	I(ε+$β^+$)†	Comments
(506 *17*)	1693.72	2.7 *6*	6.24 *18*	2.7 *6*	εK= 0.759 *12*; εL= 0.180 *8*; εM+= 0.061 *4*
(637 *17*)	1563.43	6.4 *13*	6.12 *14*	6.4 *13*	εK= 0.774 *6*; εL= 0.169 *5*; εM+= 0.0562 *17*
(762 *17*)	1437.64	1.8 *4*	6.86 *13*	1.8 *4*	εK= 0.783 *4*; εL= 0.163 *3*; εM+= 0.0538 *11*
(1191 *17*)	1009.33	3.6 *7*	7.00 *10*	3.6 *7*	εK= 0.7969 *13*; εL= 0.1532 *9*; εM+= 0.0499 *4*
(1217 *17*)	982.89	3.5 *7*	7.03 *10*	3.5 *7*	εK= 0.7974 *12*; εL= 0.1528 *9*; εM+= 0.0498 *4*
(1307 *17*)	892.53	1.6 *4*	7.44 *12*	1.6 *4*	εK= 0.7989 *10*; εL= 0.1517 *8*; εM+= 0.0493 *3*
(1408 *17*)	792.04	2.5 *6*	7.32 *12*	2.5 *6*	εK= 0.8003; εL= 0.1507 *7*; εM+= 0.04892 *24*

Continued on next page (footnotes at end of table)

^{197}Tl ε decay (2.84 h) 1961Ju05,1973Va26,1979Br12 (continued)

ε,β+ radiations (continued)

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(1523 *17*)	676.75		0.60 *9*	8.01 *8*	0.60 *9*	εK= 0.8014; εL= 0.1496 *6*; εM+= 0.04851 *21*
(1615 *17*)	585.38	0.005 *4*	4.7 *10*	7.17 *10*	4.7 *10*	av Eβ= 265 *27*; εK= 0.8019; εL= 0.1488 *5*; εM+= 0.04822 *19*
(1622 *17*)	578.01	0.024 *16*	21 *4*	6.53 *9*	21 *4*	av Eβ= 269 *27*; εK= 0.8019; εL= 0.1488 *5*; εM+= 0.04819 *19*
(2200 *17*)	0.0	0.9 *3*	52 *12*	6.42 *12*	53 *12*	av Eβ= 523 *27*; εK= 0.7936 *23*; εL= 0.1436 *7*; εM+= 0.04635 *23* E(β+)≈1.2 MeV (1961Ju05). Iε: %ε+%β+=53 *12* (1979Br12) deduced from I(K x ray); Iβ+: from ε/β+ theory calculation. Other: 0.64 *10* from I(γ±) (1979Br12).

† Absolute intensity per 100 decays.

$\gamma(^{197}Hg)$

Iγ normalization: From sum I(γ+ce)(g.s.)+(ε+β^+)(g.s.)=100 and (ε+β^+)(g.s.)=53 *12*.
For $\gamma\gamma$ and γce coin (1961Ju05,1973Va26,1979Br12), see drawings.
α(K)exp=ce(K)/Iγ(1979Br12) normalized to α(L)(134γ)=0.97 (E2 theory). I(ce(L) 134γ)=15.1 (1961Ju05,1973Va26) from ce(L)/Iγ normalization. I(ce) (1979Br12) is normalized to isomeric transitions via ^{197}Pb decay.

E_γ[†]	I_γ[†‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[b]	Comments
18.18 *3*	0.033 *9*	152.14	(3/2)$^-$	133.96	5/2$^-$	(M1)		227	α(L)= 173.6; α(M)= 40.4 E_γ: from 1961Ju05, ce s. I_γ: derived from % absolute γ ray intensity Iγ=0.0042 *11* (1993Ch44) and α=227. Other: Iγ=0.061 *14* deduced from ce(M1)=2.2 *5* (1961Ju05), α(M1)=36. Mult.: from M1:M2:M3=6: ≤1: ≤0.6 (1961Ju05).
133.99 *7*	15.5 *12*	133.96	5/2$^-$	0.0	1/2$^-$	E2		1.72	α(K)= 0.420; α(L)= 0.971; α(M)= 0.253; α(N+..)= 0.0795
152.22 *7*	56 *4*	152.14	(3/2)$^-$	0.0	1/2$^-$	M1		2.48	α(K)= 2.029; α(L)= 0.343; α(M)= 0.0797; α(N+..)= 0.0257 I_γ: other: 63 *5* (1973Va26). Mult.: from K:(L1+L2):L3=100:17 *1*:0.25 *4*, α(L)exp=0.38 *4* (1961Ju05); α(L)exp=0.35 *5* (1973Va26).
(155.6)	<0.3	307.78	(5/2)$^-$	152.14	(3/2)$^-$				
156.41 *12*	2.3 *5*	308.50	(3/2$^-$)	152.14	(3/2)$^-$	(M1+E2)	2.0 *2*	1.22 *5*	α(K)= 0.62 *6*; α(L)= 0.453 *6*; α(M)= 0.1157 *19*; α(N+..)= 0.0364 *6* Additional information 1. E_γ: other: 156.3 *3* (1961Ju05). Mult.: from α(K)exp=0.6 *1* (1961Ju05), 0.7 *2* (1979Br12).
173.78 *10*	1.91 *14*	307.78	(5/2)$^-$	133.96	5/2$^-$	M1		1.71	α(K)= 1.399; α(L)= 0.2355; α(M)= 0.0547; α(N+..)=0.01759 Mult.: from α(K)exp=1.5 *2* (1961Ju05), 1.2 *2* (1979Br12).
(174.6)	<0.2	308.50	(3/2$^-$)	133.96	5/2$^-$				
(206.8)	<0.1	792.04	1/2$^-$,3/2$^-$	585.38	(3/2)$^-$				
(214.1)	<0.1	792.04	1/2$^-$,3/2$^-$	578.01	(3/2)$^-$				
(234.1)	<0.2	792.04	1/2$^-$,3/2$^-$	557.75	(5/2$^-$,7/2$^-$)				
249.33 *12*	0.53 *7*	557.75	(5/2$^-$,7/2$^-$)	308.50	(3/2$^-$)				
(250.2)	<0.1	557.75	(5/2$^-$,7/2$^-$)	307.78	(5/2)$^-$				
269.57 *10*	4.0 *3*	578.01	(3/2)$^-$	308.50	(3/2$^-$)	M1		0.503	α(K)= 0.412; α(L)= 0.0690; α(M)=0.01602; α(N+..)=0.00511 Mult.: from α(K)exp=0.54 *5* (1961Ju05), 0.46 *5* (1973Va26), 0.36 *6* (1979Br12).
(270.2)	<0.2	578.01	(3/2)$^-$	307.78	(5/2)$^-$				
(276.7)	<0.1	585.38	(3/2)$^-$	308.50	(3/2$^-$)				
277.63 *10*	2.03 *15*	585.38	(3/2)$^-$	307.78	(5/2)$^-$	M1		0.464	α(K)= 0.380; α(L)= 0.0636; α(M)=0.01477; α(N+..)=0.00471 Mult.: from α(K)exp=0.40 *6* (1973Va26), 0.43 *9* (1979Br12).
(307.2)	<0.3	892.53	(3/2)$^-$	585.38	(3/2)$^-$				
307.8 *2*	11 *2*	307.78	(5/2)$^-$	0.0	1/2$^-$	(E2)		0.0998	α(K)= 0.0598; α(L)= 0.0300; α(M)=0.00760; α(N+..)=0.00238 I_γ: from $\gamma\gamma$ coin; Iγ(307.8γ+308.6γ)=36 *3* (1973Va26). Mult.: doublet α(K)exp=0.20 *2* (1973Va26), 0.24 *5*

$^{197}_{80}Hg_{117}$-3

^{197}Tl ε decay (2.84 h) 1961Ju05,1973Va26,1979Br12 (continued)

γ(^{197}Hg) (continued)

E_γ[†]	I_γ[†‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[b]	Comments
									(1961Ju05); K/L=4.2 *9*, (L1+L2)/L3≈7 (1961Ju05); α(K)exp=0.20 is compatible with pure M1 and E2 components.
308.6 *2*	17 *3*	308.50	(3/2⁻)	0.0	1/2⁻	(M1)		0.347	α(K)= 0.285; α(L)= 0.0476; α(M)=0.01104; α(N+..)=0.00352 I_γ: from γγ coin. Mult.: see 307.8γ.
(314.5)	<0.1	892.53	(3/2)⁻	578.01	(3/2)⁻				
(334.5)	<0.2	892.53	(3/2)⁻	557.75	(5/2⁻,7/2⁻)				
397.49 *11*	0.77 *9*	982.89	1/2⁻,3/2⁻	585.38	(3/2)⁻	(M1)		0.175	α(K)= 0.1441; α(L)=0.02390; α(M)=0.00555; α(N+..)=0.00177 Mult.: from α(K)exp=0.17 *8* (1979Br12).
405.01 *17*	1.63 *13*	982.89	1/2⁻,3/2⁻	578.01	(3/2)⁻	M1		0.167	α(K)= 0.1371; α(L)=0.02272; α(M)=0.00527; α(N+..)=0.00168 Mult.: from α(K)exp=0.10 *2* (1973Va26), 0.16 *4* (1979Br12).
(405.8)	<0.1	557.75	(5/2⁻,7/2⁻)	152.14	(3/2)⁻				
423.35 *26*	1.4 *2*	557.75	(5/2⁻,7/2⁻)	133.96	5/2⁻	(M1,E2)		0.10[&] *5*	α(K)=0.1219, α(L)=0.02018, α(M)=0.00468, α(N+..)=0.00149, α=0.1482 if mult=M1; α(K)=0.0283, α(L)=0.00974, α(M)=0.00242, α(N+..)=0.00076, α=0.0412 if mult=E2. Mult.: from α(K)exp=0.05 *4*.
(424.0)	<0.1	1009.33	(1/2⁻)	585.38	(3/2)⁻				
425.84 *10*	100 *7*	578.01	(3/2)⁻	152.14	(3/2)⁻	M1		0.146	α(K)= 0.1200; α(L)=0.01987; α(M)=0.00461; α(N+..)=0.00147 Mult.: from α(K)exp=0.120 *11* (1961Ju05), 0.126 *12* (1979Br12); K/L=6.0 *7* (1961Ju05), 6.0 *9* (1979Br12).
(431.3)	<0.1	1009.33	(1/2⁻)	578.01	(3/2)⁻				
433.14 *10*	19.4 *14*	585.38	(3/2)⁻	152.14	(3/2)⁻	M1		0.140	α(K)= 0.1147; α(L)=0.01899; α(M)=0.00440; α(N+..)=0.00140 I_γ: other: 18 *2* (1973Va26). Mult.: from α(K)exp=0.124 *11* (1961Ju05), 0.104 *14* (1973Va26), 0.13 *2* (1979Br12).
444.08 *10*	4.4 *3*	578.01	(3/2)⁻	133.96	5/2⁻	(E2+M1)	2.1 *+34−7*	0.054 *15*	α(K)= 0.041 *13*; α(L)= 0.0101 *15*; α(M)= 0.0024 *4*; α(N+..)=0.00077 *11* Additional information 2. Mult.: from α(K)exp=0.041 *13* (1961Ju05). Other: ≈0.14 (1979Br12).
(451.3)	<0.2	1009.33	(1/2⁻)	557.75	(5/2⁻,7/2⁻)				
451.42 *10*	8.2 *6*	585.38	(3/2)⁻	133.96	5/2⁻	(E2+M1)	1.7 *+7−6*	0.058 *18*	α(K)= 0.045 *16*; α(L)= 0.0102 *18*; α(M)= 0.0025 *4*; α(N+..)=0.00078 *13* Additional information 3. Mult.: from α(K)exp=0.054 *14* (1961Ju05), 0.036 *5* (1973Va26).

$^{197}_{80}Hg_{117}$-4

γ(^{197}Hg) (continued)

E_γ[†]	I_γ[†‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[b]	Comments
483.98 *10*	1.90 *14*	792.04	1/2⁻,3/2⁻	308.50	(3/2⁻)	M1+E2	0.66 *+45−4*	0.081 *19*	α(K)= 0.066 *16*; α(L)= 0.0118 *20*; α(M)= 0.0028 *5*; α(N+..)=0.00088 *14* Additional information 4. Mult.: from α(K)exp=0.066 *16* (1973Va26).
(484.3)	<0.2	792.04	1/2⁻,3/2⁻	307.78	(5/2)⁻				
545.12 *11*	1.04 *9*	1437.64	1/2⁻,3/2⁻	892.53	(3/2)⁻	M1+E2	0.78 *+49−3*	0.056 *13*	α(K)= 0.045 *11*; α(L)= 0.0081 *15* Additional information 7. Mult.: from α(K)exp=0.045 *11* (1973Va26).
[x]547.21 *31*	0.31 *11*								
548.4 *3*	0.29 *7*	1693.72	1/2$^{(-)}$,3/2$^{(-)}$	1145.24	(1/2⁻,3/2⁻)				
(558.0)	<0.3	557.75	(5/2⁻,7/2⁻)	0.0	1/2⁻				
577.97 *10*	34.4 *24*	578.01	(3/2)⁻	0.0	1/2⁻	M1		0.0656	α(K)= 0.0538; α(L)=0.00885 I_γ: other: 28 *2* (1973Va26). Mult.: from α(K)exp=0.048 *9* (1961Ju05), 0.057 *7* (1979Br12).
(583.9)	<0.2	892.53	(3/2)⁻	308.50	(3/2⁻)				
585.24 *17*	3.8 *4*	585.38	(3/2)⁻	0.0	1/2⁻	(M1)		0.0635	α(K)= 0.0521; α(L)=0.00857 I_γ: from γγ coin; doublet Iγ=6.3 *9* (1973Va26). Mult.: doublet α(K)exp=0.054 *19* (1961Ju05), 0.056 *11* (1979Br12).
585.24 *17*	3.2 *4*	892.53	(3/2)⁻	307.78	(5/2)⁻	(M1)		0.0635	α(K)= 0.0521; α(L)=0.00857 I_γ: from γγ coin. Mult.: from α(K)exp=0.056 *11*.
639.92 *10*	6.7 *5*	792.04	1/2⁻,3/2⁻	152.14	(3/2)⁻	M1		0.0503	α(K)= 0.0413; α(L)=0.00677 Mult.: from α(K)exp=0.042 *9* (1979Br12).
645.41 *12*	1.18 *13*	1437.64	1/2⁻,3/2⁻	792.04	1/2⁻,3/2⁻	(M1)		0.0492	α(K)= 0.0404; α(L)=0.00662 Mult.: from α(K)exp≈0.042 (1973Va26), 0.06 *4* (1979Br12).
658.00 *11*	0.8 *1*	792.04	1/2⁻,3/2⁻	133.96	5/2⁻				
674.28 *17*	11.3 *8*	982.89	1/2⁻,3/2⁻	308.50	(3/2⁻)	M1+E2	2.2 *+49−8*	0.019 *5*	α(K)= 0.015 *5*; α(L)= 0.0030 *6* Additional information 6. Mult.: from α(K)exp≈0.016 (1973Va26), 0.015 *4* (1979Br12).
(675.0)	<0.3	982.89	1/2⁻,3/2⁻	307.78	(5/2)⁻				
676.75 *24*	4.6 *3*	676.75	1/2⁻,3/2⁻	0.0	1/2⁻	M1		0.0435	α(K)= 0.0358; α(L)=0.00585 Mult.: from α(K)exp=0.041 *9* (1979Br12).
(700.7)	<0.1	1009.33	(1/2⁻)	308.50	(3/2⁻)				
701.53 *10*	7.9 *6*	1009.33	(1/2⁻)	307.78	(5/2)⁻	E2		0.0126	α(K)=0.00970; α(L)=0.00218 Mult.: from α(K)exp=0.008 *3* (1973Va26), 0.009 *3* (1979Br12).
740.05 *18*	0.24 *4*	892.53	(3/2)⁻	152.14	(3/2)⁻	[E2,M1][@]			α(K)=0.00872, α(L)=0.00189, α=0.0112 if mult=E2; α(K)=0.0284, α(L)=0.00463, α=0.0345 if mult=M1.

γ(^{197}Hg) (continued)

E_γ[†]	I_γ[†‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[b]	Comments
758.57 *11*	0.89 *9*	892.53	(3/2)$^-$	133.96	5/2$^-$	[E2,M1][@]			α(K)=0.00830, α(L)=0.00178, α=0.0107 if mult=E2; α(K)=0.0266, α(L)=0.00434, α=0.0324 if mult=M1.
771.23 *12*	0.66 *8*	1563.43	1/2$^-$,3/2$^-$	792.04	1/2$^-$,3/2$^-$				
792.06 *10*	13.6 *11*	792.04	1/2$^-$,3/2$^-$	0.0	1/2$^-$	M1+E2	1.24 *+71−3*	0.017 *4*	α(K)= 0.014 *3*; α(L)= 0.0025 *5* Additional information 5. Mult.: from α(K)exp=0.014 *3* (1961Ju05), 0.010 *2* (1973Va26), 0.017 *4* (1979Br12).
831.29 *19*	0.40 *5*	982.89	1/2$^-$,3/2$^-$	152.14	(3/2)$^-$				
(848.8)	<0.1	982.89	1/2$^-$,3/2$^-$	133.96	5/2$^-$				
851.9 *4*	0.22 *7*	1437.64	1/2$^-$,3/2$^-$	585.38	(3/2)$^-$	(M1)		0.02403	α(K)=0.01976; α(L)=0.00321 Mult.: from α(K)exp≈0.02 (1973Va26).
857.18 *10*	15.9 *11*	1009.33	(1/2$^-$)	152.14	(3/2)$^-$	M1		0.02365	α(K)=0.01945; α(L)=0.00316 Mult.: from α(K)exp=0.020 *4* (1961Ju05), 0.024 *4* (1979Br12).
(875.3)	<0.1	1009.33	(1/2$^-$)	133.96	5/2$^-$				
892.47 *10*	8.8 *6*	892.53	(3/2)$^-$	0.0	1/2$^-$	M1		0.02132	α(K)=0.01753; α(L)=0.00285 Mult.: from α(K)exp=0.017 *4* (1961Ju05,1979Br12).
901.61 *10*	2.9 *2*	1693.72	1/2$^{(-)}$,3/2$^{(-)}$	792.04	1/2$^-$,3/2$^-$	(M1)		0.02077	α(K)=0.01708; α(L)=0.00277 Mult.: from α(K)exp=0.023 *11* (1979Br12).
982.75 *10*	9.7 *7*	982.89	1/2$^-$,3/2$^-$	0.0	1/2$^-$	M1		0.01665	α(K)=0.01370; α(L)=0.00222 Mult.: from α(K)exp=0.020 *5* (1961Ju05), 0.012 *2* (1973Va26), 0.011 *3* (1979Br12).
1009.35 *10*	3.06 *23*	1009.33	(1/2$^-$)	0.0	1/2$^-$	(E0+M1)		0.06	α(K)=0.01280, α(L)=0.00207, α=0.0156 if mult=M1. Mult.: from α(K)exp=0.049 *13* (1961Ju05), 0.036 *7* (1973Va26), 0.063 *14* (1979Br12).
1108.0 *2*	0.71 *14*	1693.72	1/2$^{(-)}$,3/2$^{(-)}$	585.38	(3/2)$^-$				
1130.1 *3*	0.48 *6*	1437.64	1/2$^-$,3/2$^-$	307.78	(5/2)$^-$				
1145.2 *2*	0.8 *1*	1145.24	(1/2$^-$,3/2$^-$)	0.0	1/2$^-$				
1254.51 *17*	3.5 *6*	1563.43	1/2$^-$,3/2$^-$	308.50	(3/2$^-$)				Doublet α(K)exp<0.008 (1979Br12).
1255.73 *12*	2.5 *5*	1563.43	1/2$^-$,3/2$^-$	307.78	(5/2)$^-$				
1285.59 *10*	6.4 *5*	1437.64	1/2$^-$,3/2$^-$	152.14	(3/2)$^-$	(M1)		0.00848	α(K)=0.00699; α(L)=0.00112 Mult.: from α(K)exp=0.006 *3* (1979Br12).
1385.35 *10*	9.7 *7*	1693.72	1/2$^{(-)}$,3/2$^{(-)}$	308.50	(3/2$^-$)	(M1,E2)			α(K)=0.00580, α(L)=0.00093, α=0.00704 if mult=M1; α(K)=0.00267, α(L)=0.00045, α=0.00327 if mult=E2. Mult.: from α(K)exp=0.004 *2* (1979Br12).
1411.34 *10*	35 *3*	1563.43	1/2$^-$,3/2$^-$	152.14	(3/2)$^-$	(M1)		0.00672	α(K)=0.00554; α(L)=0.00088 I_γ: other: 28 *2* (1973Va26). Mult.: from α(K)exp=0.005 *1* (1979Br12).
1429.59 *10*	6.8 *5*	1563.43	1/2$^-$,3/2$^-$	133.96	5/2$^-$				
1437.67 *10*	4.6 *3*	1437.64	1/2$^-$,3/2$^-$	0.0	1/2$^-$	(M1)		0.00641	α(K)=0.00529; α(L)=0.00084 Mult.: from α(K)exp=0.008 *4* (1979Br12).
1541.68 *11*	1.66 *13*	1693.72	1/2$^{(-)}$,3/2$^{(-)}$	152.14	(3/2)$^-$				

$^{197}_{80}Hg_{117}$-6

^{197}Tl ε decay (2.84 h) 1961Ju05,1973Va26,1979Br12 (continued)

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

E_γ[†]	I_γ[†‡a]	E_i(level)	J_i^π	E_f	J_f^π
1563.42 *12*	0.59 *6*	1563.43	$1/2^-,3/2^-$	0.0	$1/2^-$
1693.67 *10*	5.3 *4*	1693.72	$1/2^{(-)},3/2^{(-)}$	0.0	$1/2^-$

[†] From 1979Br12 (semi γ-singles), except as noted.
[‡] Relative intensities normalized to Iγ(425.85γ)=100 *7* (1979Br12). I(Kβ_1' x ray)=117 *24* (1979Br12). I($\gamma^{\pm}$)=9.8 *8* (1979Br12).
[#] From α(K)exp measurements.
[@] From ΔJ and $\Delta\pi$ between transition levels.
[&] From α=[α(M1) + α(E2)]/2 and $\Delta\alpha$=[α(M1) − α(E2)]/2.
[a] For absolute intensity per 100 decays, multiply by 0.13 *4*.
[b] 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.

$^{197}_{80}Hg_{117}$-7

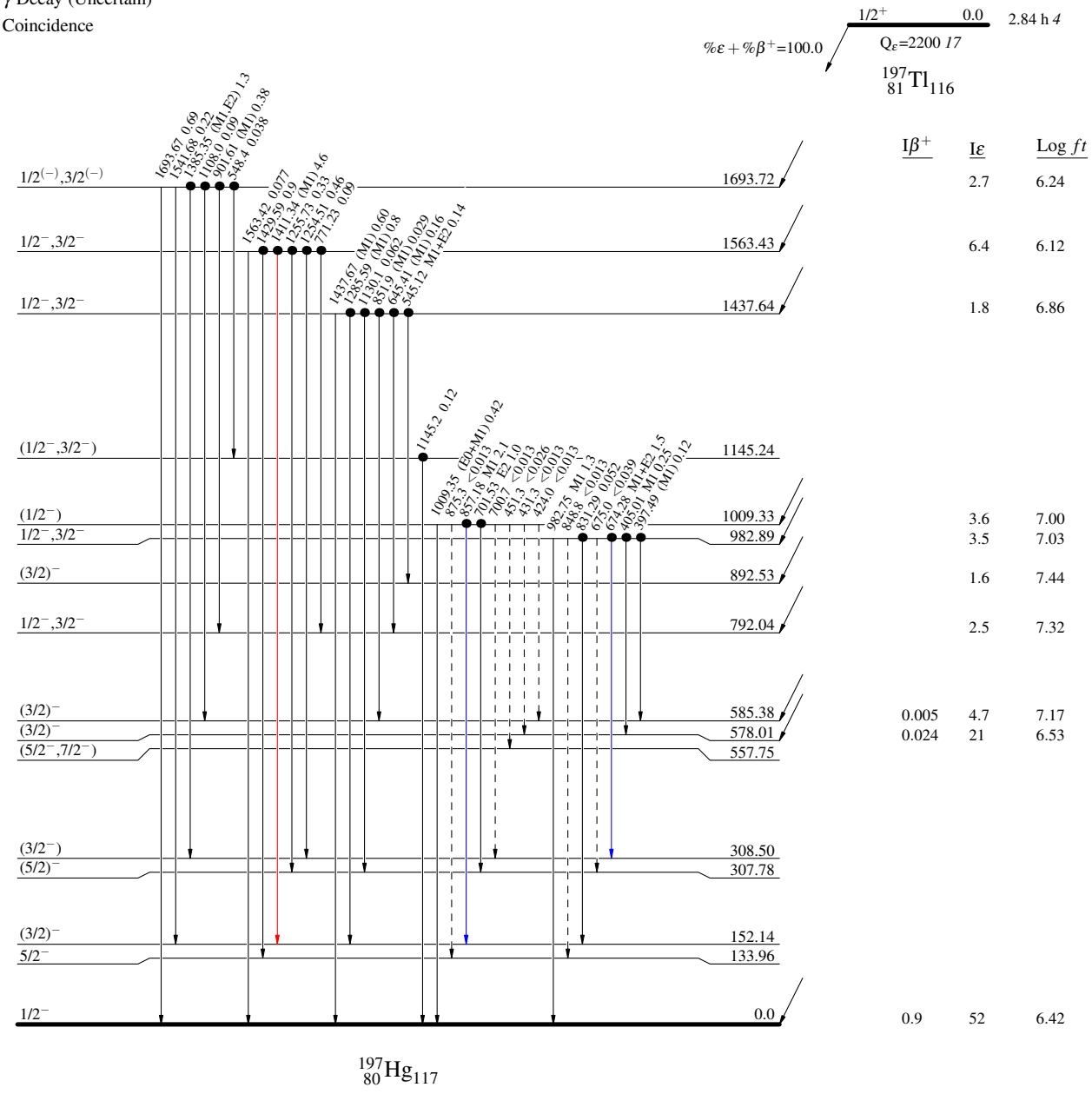
^{197}Tl ε decay (2.84 h) 1961Ju05,1973Va26,1979Br12

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)
- Coincidence

Decay Scheme

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



^{197}Tl ε decay (2.84 h) 1961Ju05,1973Va26,1979Br12

Decay Scheme (continued)

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