Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 201,346 (2025)	21-Jan-2025

Q(β^-)=1308 *20*; S(n)=6729 *21*; S(p)=9660 *syst*; Q(α)=−680 *30* 2021Wa16
ΔS(p)=200 (syst,2021Wa16).
S(2n)=12398 *20*, S(2p)=17900 *200* (syst) (2021Wa16).

^{206}Hg Levels

Cross Reference (XREF) Flags

A	^{206}Au β^- decay	E	^{204}Hg(t,pγ)
B	^{210}Pb α decay	F	^{204}Hg(^{18}O,^{16}Oγ)
C	^{9}Be(^{208}Pb,Xγ)	G	^{238}U(^{208}Pb,Xγ)
D	^{9}Be(^{238}U,Xγ)	H	Coulomb excitation

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0	0^+	8.32 min *13*	ABCDEFGH	%β^-=100 $T_{1/2}$: Weighted average of 8.5 min *1* (1962Ka27), 8.1 min *4* (1964Wo05) and 8.15 min *10* (1968Wo08). Others: 7.5 min *10* (1961Nu01), 8.36 min *+80−60* and 8.34 min *+106−85* (1998Zh22). $\Delta<r^2>(^{204}Hg,^{206}Hg)$=−0.107 *5* and $\Delta<r^2>(^{205}Hg,^{206}Hg)$=−0.071 *5* (2000Ga58). Measured isotope shift relative to that of ^{198}Hg: $\delta\nu(^{206}Hg,^{198}Hg)$=−20930 MHz *160* (2021Da01). Measured radius relative to that of ^{198}Hg: $\delta<r^2>(^{206}Hg,^{198}Hg)$=+0.409 fm^2 *3*(stat) *29*(syst) (2021Da01). Other: 1986Ul02.
1068.20 *20*	2^+	1.27 ps *17*	A CDEFGH	J$^\pi$: 1068.2γ E2 to 0^+. $T_{1/2}$: From B(E2,exp)=4.4 W.u. *6* in Coulomb Excitation (2023Mo04). Other: <21 ps from $\gamma\gamma$ coin. data in ^{204}Hg(t,pγ) (1982Be38). Configuration=$\pi(s^{-1}_{1/2},d^{-1}_{3/2})$.
2102.4 *3*	5^-	2.09 μs *2*	A CDEFG	μ=5.45 *5*; Q=0.74 *15* J$^\pi$: 1034.2γ E3 to 2^+. $T_{1/2}$: Weighted average of 2.15 μs *21* (1982Be38), 2.09 μs *2* (2011St21), 2.08 μs *4* (2018La03) and 2.19 μs *7* (2015Al09). μ: From the measured g-factor=1.09 *1* in ^{204}Hg(t,pγ) (1982Be38,2020StZV) using the perturbed angular distribution technique. The value is corrected for diamagnetic shielding and Knight shift. Q: From Q=0.65 *13* determined in 1984Ma43 using the perturbed angular distribution technique and relative to Q(^{199}Hg)=0.83 *9*. The value was corrected by the evaluator to the adopted Q(^{199}Hg)=0.95 *7* (2021StZZ). Configuration=$\pi(s^{-1}_{1/2},h^{-1}_{11/2})$.
2465.8 *6*	$(7^-)^{\#}$		CD G	Configuration=$\pi(d^{-1}_{3/2},h^{-1}_{11/2})$.
2705.2 *20*	(3^-)	0.51 ns *+39−13*	H	J$^\pi$: From 2023Mo04. $T_{1/2}$: From B(E3,exp)=30 W.u. *+10−13* in Coulomb Excitation (2023Mo04).
3622.1 *7*	$(8^+)^{\#}$		CD G	Configuration=$\pi(h^{-2}_{11/2})$. The assignment is tentative.
3625	0^+		E	E(level): From ^{204}Hg(t,p) (1978Fl08). J$^\pi$: L=0 in ^{204}Hg(t,p) (1978Fl08).
3723.0 *7*	$(10^+)^{\#}$	106 ns *5*	CD G	$T_{1/2}$: Weighted average of 92 ns *8* (2001Fo08), 90 ns *10* (2001La09),

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Adopted Levels, Gammas (continued)

^{206}Hg Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
			96 ns *15* (2009Al29), 112 ns *4* (2011St21) and 106 ns *15* (2018La03). Configuration=$\pi(h^{-2}_{11/2})$.
4605.8 *11*	$(10^+)^{\#}$	G	Configuration=$\nu(g_{9/2},i^{-1}_{13/2})$. The assignment is tentative.
4987.1 *11*	$(11^+)^{\#}$	G	Configuration=$\nu(g_{9/2},i^{-1}_{13/2})$. The assignment is tentative.
5643.4 *11*	$(12^+)^{\#}$	G	Configuration=$\pi(d^{-1}_{3/2},h^{-1}_{11/2})_{7-}$ $\nu(g_{9/2}p^{-1}_{1/2})_{5-}$. The assignment is tentative.
6067.2 *11*	$(13^-)^{\#}$	G	Configuration=$\nu(h^{-2}_{11/2})_{10+}$ coupled to 3^- octupole phonon. The assignment is tentative.
6276.2? *15*		G	XREF: G(?) Configuration=$\nu(j_{15/2},i^{-1}_{13/2})$. The assignment is tentative.

[†] From a least-squares fit to Eγ, unless otherwise stated.
[‡] From deduced transition multipolarities (^{204}Hg(t,pγ)) using $\gamma(\theta)$ in 1982Be38 and 1984Ma43, and L values in 1978Fl08, unless otherwise stated.
[#] From ^{238}U(^{208}Pb,xγ) (2001Fo08). The assignment is tentative.

$\gamma(^{206}Hg)$

E$_i$(level)	J$_i^{\pi}$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$_f^{\pi}$	Mult.	α[@]	Comments
1068.20	2^+	1068.2 *2*	100	0.0	0^+	E2	0.00531 *7*	α(K)=0.00429 *6*; α(L)=0.000782 *11*; α(M)=0.0001840 *26* α(N)=4.60×10^{-5} *6*; α(O)=8.54×10^{-6} *12*; α(P)=5.62×10^{-7} *8* B(E2)(W.u.)=4.4 *6* Mult.: From A$_2$=+0.22 *2* in ^{204}Hg(t,pγ) (1982Be38). The positive sign argues against a ΔJ=1 transition; Mult.=M2 is excluded from systematics of first excited states in neighboring even-even nuclei.
2102.4	5^-	1034.2 *2*	100	1068.20	2^+	E3	0.01283 *18*	B(E3)(W.u.)=0.1799 *17* α(K)=0.00969 *14*; α(L)=0.002390 *33*; α(M)=0.000581 *8* α(N)=0.0001455 *20*; α(O)=2.66×10^{-5} *4*; α(P)=1.442×10^{-6} *20* Mult.: A$_2$=0.38 *5* in ^{204}Hg(t,pγ) (1982Be38). The measured ratio of A$_2$(1068γ)/A$_2$(1034γ)= 0.58 *9* is consistent with a J=5 to 2 transition for which A$_2$(2 to 0)/A$_2$(5 to 2)=0.6 can be expected, while A$_2$(2 to 0)/A$_2$(4 to 2)=1.0 could be expected if 1034γ were E2 (1982Be38).
2465.8	(7^-)	363.4[#] *5*	100	2102.4	5^-			I$_\gamma$: From ^{9}Be(^{208}Pb,xγ) (2011St21).
2705.2	(3^-)	1637 *2*	100	1068.20	2^+	[E3]	0.00483 *7*	B(E3)(W.u.)=30 *+10−13* E$_\gamma$,I$_\gamma$: From 2023Mo04.
3622.1	(8^+)	1156.3[#] *5*	100	2465.8	(7^-)			I$_\gamma$: From ^{9}Be(^{208}Pb,xγ) (2011St21).
3723.0	(10^+)	100.9[#] *5*	49 *5*	3622.1	(8^+)	[E2]	5.34 *14*	B(E2)(W.u.)=0.84 *5* α(K)=0.614 *9*; α(L)=3.53 *10*; α(M)=0.924 *25* α(N)=0.229 *6*; α(O)=0.0380 *10*; α(P)=0.0001148 *22* I$_\gamma$: From I(γ+ce)(100γ)/I(γ+ce)(1257γ)=3.2 *3*, determined using the I(γ+ce)(1157γ)/I(γ+ce) (1257γ) ratio in (HI,xnγ) (2001Fo08).
		1257.2[#] *5*	100 *5*	2465.8	(7^-)	[E3]	0.00832 *12*	B(E3)(W.u.)=0.223 *22*

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Adopted Levels, Gammas (continued)

γ(^{206}Hg) (continued)

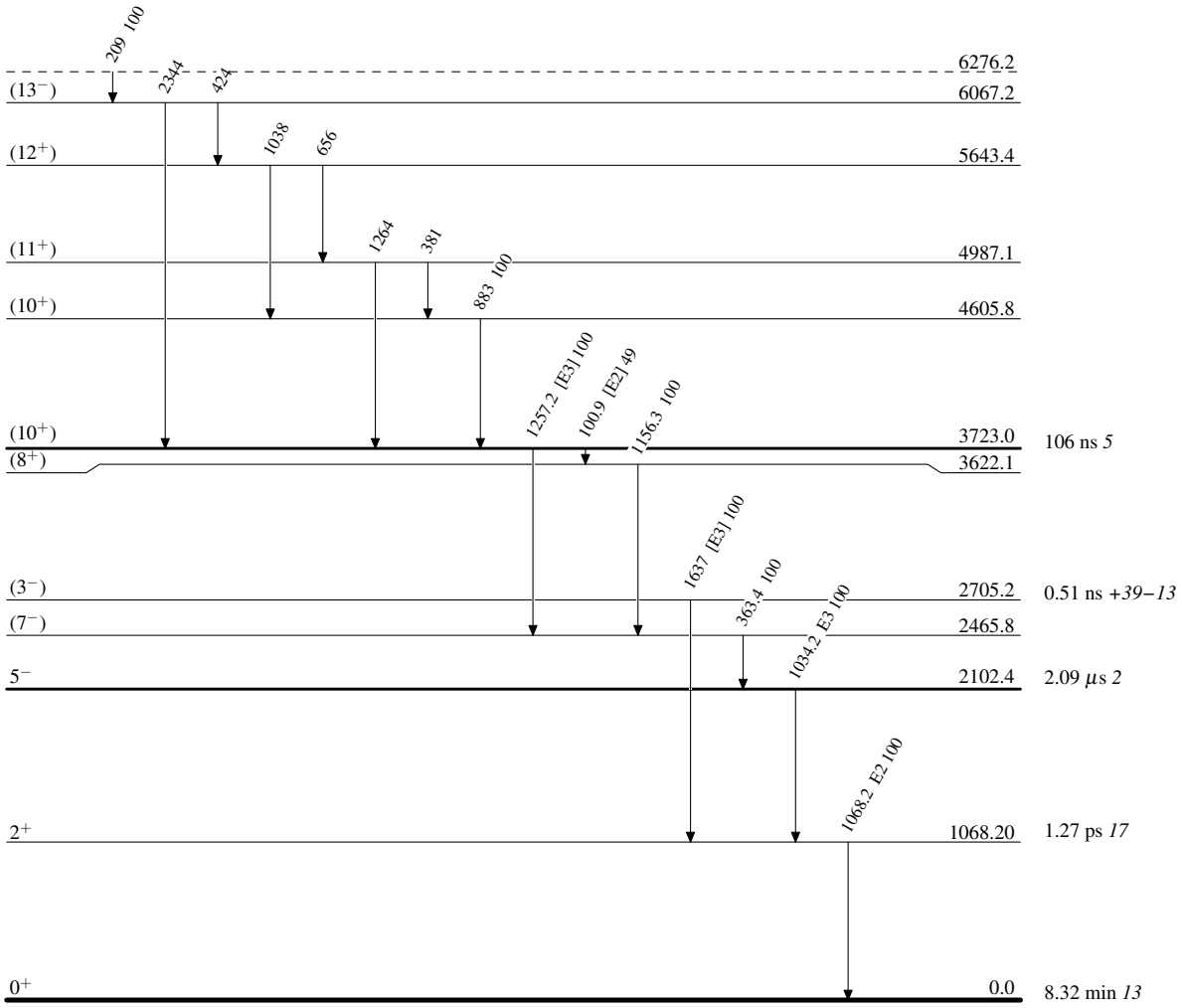
E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Comments
						α(K)=0.00648 *9*; α(L)=0.001400 *20*; α(M)=0.000336 *5* α(N)=8.42×10^{-5} *12*; α(O)=1.552×10^{-5} *22*; α(P)=9.36×10^{-7} *13*; α(IPF)=3.42×10^{-6} *5*
4605.8	(10$^+$)	883[‡] *1*	100	3723.0	(10$^+$)	I_γ: From ^{238}U(^{208}Pb,xγ) (2001Fo08).
4987.1	(11$^+$)	381[‡] *1*		4605.8	(10$^+$)	
		1264[‡] *1*		3723.0	(10$^+$)	
5643.4	(12$^+$)	656[‡] *1*		4987.1	(11$^+$)	
		1038[‡] *1*		4605.8	(10$^+$)	
6067.2	(13$^-$)	424[‡] *1*		5643.4	(12$^+$)	
		2344[‡] *1*		3723.0	(10$^+$)	
6276.2?		209[‡] *1*	100	6067.2	(13$^-$)	I_γ: From ^{238}U(^{208}Pb,xγ) (2001Fo08).

† From ^{204}Hg(t,pγ) (1982Be38), unless otherwise stated.
‡ From ^{238}U(^{208}Pb,xγ) (2001Fo08).
# From ^{9}Be(^{208}Pb,xγ) (2011St21).
@ Additional information 1.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{206}_{80}Hg_{126}$