^{204}Hg(α,2nγ) 1993Bl02

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

1993Bl02: 93% enriched ^{204}Hg target. Reaction: ^{204}Hg(α,2nγ), E=35 MeV. Detectors: two HPGe. Measured Eγ, Iγ, $\gamma\gamma$ coin, $\gamma(\theta)$.

Other: 1971Be37,1977Dr08.

^{206}Pb Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0.0	0^+		
803.10 *10*	2^+		
1166.4 *5*	0^+		
1340.61 *18*	3^+		
1466.8 *4*	2^+		
1684.10 *14*	4^+		
1784.4 *4*	2^+		
1997.82 *25*	4^+		
2200.30 *17*	7^-	125.1 μs *12*	$T_{1/2}$: From Adopted Levels.
2384.2 *4*	6^-		
2647.6 *5*	3^-		
2658.46 *25*	9^-		
2782.3 *4*	5^-		
2864.6 *4*	7^-		
2929.2 *5*	4^+		
2954.7 *4*	8^-		
3016.6 *7*	5^-		
3260.5 *5*	6^+		
3279.5 *5*	5^-		
3402.8 *5*	5^-		
3776.7 *5*	5^-		
3957.7 *4*	10^+		
4027.4 *4*	12^+	202 ns *3*	$T_{1/2}$: Measured values in (α,2n) are: 205 ns *4* [1993Bl02,458.1γ(t)], 185 ns *15* [1983St15,γ(t)], 198 ns *6* [1979Ma37,γ(t)], and 200 ns *14* [1971Be37,γ(t)]. Note that $T_{1/2}$=424 ns *35* [70γ(t)] and 379 ns *31* [1369γ(t)] are also reported in 1971Be37.
4758.7 *5*	10^+		
4841.9 *5*	10^+		
5217.8 *5*	12^+		
5554.0 *5*	12^+		
5783.2 *5*	13^+		
6034.4 *5*	14^+		
6430.9 *6*	15^-		
6565.5 *7*	15^-		
6851.6 *8*	(16)		

[†] From a least-squares fit to Eγ.
[‡] From 1993Bl02.

^{204}Hg(α,2nγ) 1993Bl02 (continued)

γ(^{206}Pb)

$E_γ$[†]	$I_γ$[†]	E_i(level)	$J^π_i$	E_f	$J^π_f$	Mult.[‡]	Comments
69.7 *5*	1.55 *23*	4027.4	12$^+$	3957.7	10$^+$		$E_γ$: From 1977Dr08. $I_γ$: From adopted Iγ(69.7γ)/ Iγ(1369γ)=2.06% *29* and Iγ(1369γ)=75 *3*.
184.0		2384.2	6$^-$	2200.30	7$^-$		
202.4 *5*		2200.30	7$^-$	1997.82	4$^+$	[E3]	
250.8 *5*	4 *1*	6034.4	14$^+$	5783.2	13$^+$	M1	Mult.: A_2=0.35 *20*, A_4=−0.26 *21* (1993Bl02).
286.1 *5*		6851.6	(16)	6565.5	15$^-$		
296.2 *4*	17 *2*	2954.7	8$^-$	2658.46	9$^-$	M1	Mult.: A_2=−0.41 *9*, A_4=0.24 *13* (1993Bl02).
313.7 *5*	5 *2*	1997.82	4$^+$	1684.10	4$^+$	M1	Mult.: A_2=−0.15 *9*, A_4=−0.24 *7* (1993Bl02).
317.6 *5*	1 *5*	1784.4	2$^+$	1466.8	2$^+$		
336.2 *4*	12 *3*	5554.0	12$^+$	5217.8	12$^+$	D,Q	Mult.: A_2=0.24 *14* (1993Bl02).
343.5 *2*	205 *5*	1684.10	4$^+$	1340.61	3$^+$	M1	Mult.: A_2=−0.26 *2*, A_4=−0.11 *3* (1993Bl02).
398.0 *4*	17 *2*	2782.3	5$^-$	2384.2	6$^-$	M1	Mult.: A_2=−0.11 *6*, A_4=−0.09 *10* (1993Bl02).
458.1 *2*	320 *5*	2658.46	9$^-$	2200.30	7$^-$	E2	Mult.: A_2=0.35 *2*, A_4=−0.09 *2* (1993Bl02).
459.1[#] *5*	3 *1*	5217.8	12$^+$	4758.7	10$^+$		
480.4 *4*	24 *3*	2864.6	7$^-$	2384.2	6$^-$	M1	Mult.: A_2=0.08 *10*, −0.01 *14*.
497.1 *5*	7 *3*	3279.5	5$^-$	2782.3	5$^-$	M1	Mult.: A_2>0 (1993Bl02).
516.1		3776.7	5$^-$	3260.5	6$^+$		
516.2 *1*	630 *10*	2200.30	7$^-$	1684.10	4$^+$	E3	Mult.: A_2=0.36 *2*, A_4=−0.02 *3* (1993Bl02).
531.1 *4*	15 *2*	6565.5	15$^-$	6034.4	14$^+$	D	Mult.: A_2=−0.33 *7*, A_4=−0.05 *3* (1993Bl02).
537.5 *2*	340 *5*	1340.61	3$^+$	803.10	2$^+$	M1	Mult.: A_2=−0.19 *1*, A_4=−0.08 *2* (1993Bl02).
565.5 *5*	3 *1*	5783.2	13$^+$	5217.8	12$^+$		
632.4 *5*	10 *2*	3016.6	5$^-$	2384.2	6$^-$	M1	Mult.: A_2=0.03 *9*, A_4=−0.11 *17* (1993Bl02).
657.2 *3*	55 *2*	1997.82	4$^+$	1340.61	3$^+$	M1	Mult.: A_2=−0.20 *2*, A_4=0.02 *3* (1993Bl02).
663.8 *4*	12 *5*	1466.8	2$^+$	803.10	2$^+$	M1	Mult.: A_2=0.26 *9*, A_4=−0.02 *14* (1993Bl02).
664.2 *4*	26 *5*	2864.6	7$^-$	2200.30	7$^-$	M1	Mult.: A_2=0.26 *9*, A_4=−0.02 *14* (1993Bl02).
754.4 *4*	25 *2*	2954.7	8$^-$	2200.30	7$^-$	M1	Mult.: A_2=−0.51 *10*, A_4=0.39 *13* (1993Bl02).
803.1 *1*	1000	803.10	2$^+$	0.0	0$^+$	E2	Mult.: A_2=0.13 *1*, A_4=0.04 *1* (1993Bl02).
816.5 *5*	9 *2*	6034.4	14$^+$	5217.8	12$^+$	E2	
881.0 *1*	525 *7*	1684.10	4$^+$	803.10	2$^+$	E2	Mult.: A_2=0.16 *1*, A_4=−0.03 *2* (1993Bl02).
895.3 *5*	5 *2*	3279.5	5$^-$	2384.2	6$^-$	M1	Mult.: A_2=−0.32 *18*, A_4=0.08 *29* (1993Bl02).
981.2 *4*	18 *2*	1784.4	2$^+$	803.10	2$^+$	M1	Mult.: A_2=0.09 *11*, A_4=0.06 *17* (1993Bl02).
1098.3 *4*	21 *2*	2782.3	5$^-$	1684.10	4$^+$	E1	Mult.: A_2=−0.19 *2*, A_4=0.19 *17* (1993Bl02).
1166.4 *5*		1166.4	0$^+$	0.0	0$^+$	E0	$E_γ$,Mult.: From ce in 1977Dr08. K:L:M(exp)=0.40 *5*:0.067 *7*: <0.03 (1977Dr08).
1190.3 *4*	25 *4*	5217.8	12$^+$	4027.4	12$^+$	M1,E2	Mult.: A_2=−0.08 *3*, A_4=0.05 *3* (1993Bl02).
1194.7 *5*	10 *3*	1997.82	4$^+$	803.10	2$^+$	E2	Mult.: A_2>0 (1993Bl02).
1299.1 *3*	80 *3*	3957.7	10$^+$	2658.46	9$^-$	E1	Mult.: A_2=−0.24 *1*, A_4=−0.04 *1* (1993Bl02).
1369.0 *3*	75 *3*	4027.4	12$^+$	2658.46	9$^-$	E3	Mult.: A_2=0.32 *10*, A_4=0.24 *14* (1993Bl02).
1526.6 *5*	8 *3*	5554.0	12$^+$	4027.4	12$^+$		
1576.4 *5*	9 *1*	3260.5	6$^+$	1684.10	4$^+$	E2	Mult.: A_2=0.5 *1* (1993Bl02).
1588.6 *4*	13 *1*	2929.2	4$^+$	1340.61	3$^+$	M1	Mult.: A_2=−0.23 *17*, A_4=0.54 *23* (1993Bl02).
1718.7 *4*	20 *2*	3402.8	5$^-$	1684.10	4$^+$	E1	Mult.: A_2=−0.44 *12*, A_4=−0.11 *20* (1993Bl02).
1755.5 *4*	15 *3*	5783.2	13$^+$	4027.4	12$^+$	D,Q	Mult.: A_2=0.24 *8*, A_4=0.2 *1* (1993Bl02).
1757.7 *5*	≤2	3957.7	10$^+$	2200.30	7$^-$	(E3)	
1778.9 *5*	7 *2*	3776.7	5$^-$	1997.82	4$^+$	E1	Mult.: A_2=−0.26 *9*, A_4=0.50 *14* (1993Bl02), incorrectly given as M1.
1844.5 *5*	10 *2*	2647.6	3$^-$	803.10	2$^+$	E1	Mult.: A_2=−0.76 *10*, A_4=−0.29 *15* (1993Bl02), incorrectly given as M1.
2007.3 *5*	7 *1*	6034.4	14$^+$	4027.4	12$^+$	Q	Mult.: A_2=1.4 *3* (1993Bl02).
2100.2 *4*	23 *2*	4758.7	10$^+$	2658.46	9$^-$	D	Mult.: A_2=−0.42 *7*, A_4=0.02 *10* (1993Bl02).
2183.4 *4*	15 *2*	4841.9	10$^+$	2658.46	9$^-$	D	Mult.: A_2=−0.11 *13*, A_4=−0.10 *20* (1993Bl02).
2403.4 *4*	13 *1*	6430.9	15$^-$	4027.4	12$^+$	E3	Mult.: A_2=0.34 *16*, A_4=−0.2 *2* (1993Bl02). M2 excluded by $ΔJ^π$.

Continued on next page (footnotes at end of table)

^{204}Hg(α,2nγ) 1993Bl02 (continued)

γ(^{206}Pb) (continued)

† From 1993Bl02, unless otherwise stated. Eγ uncertainties were assigned by evaluator based on 0.1-0.5 keV reported by authors. Iγ are prompt intensities.

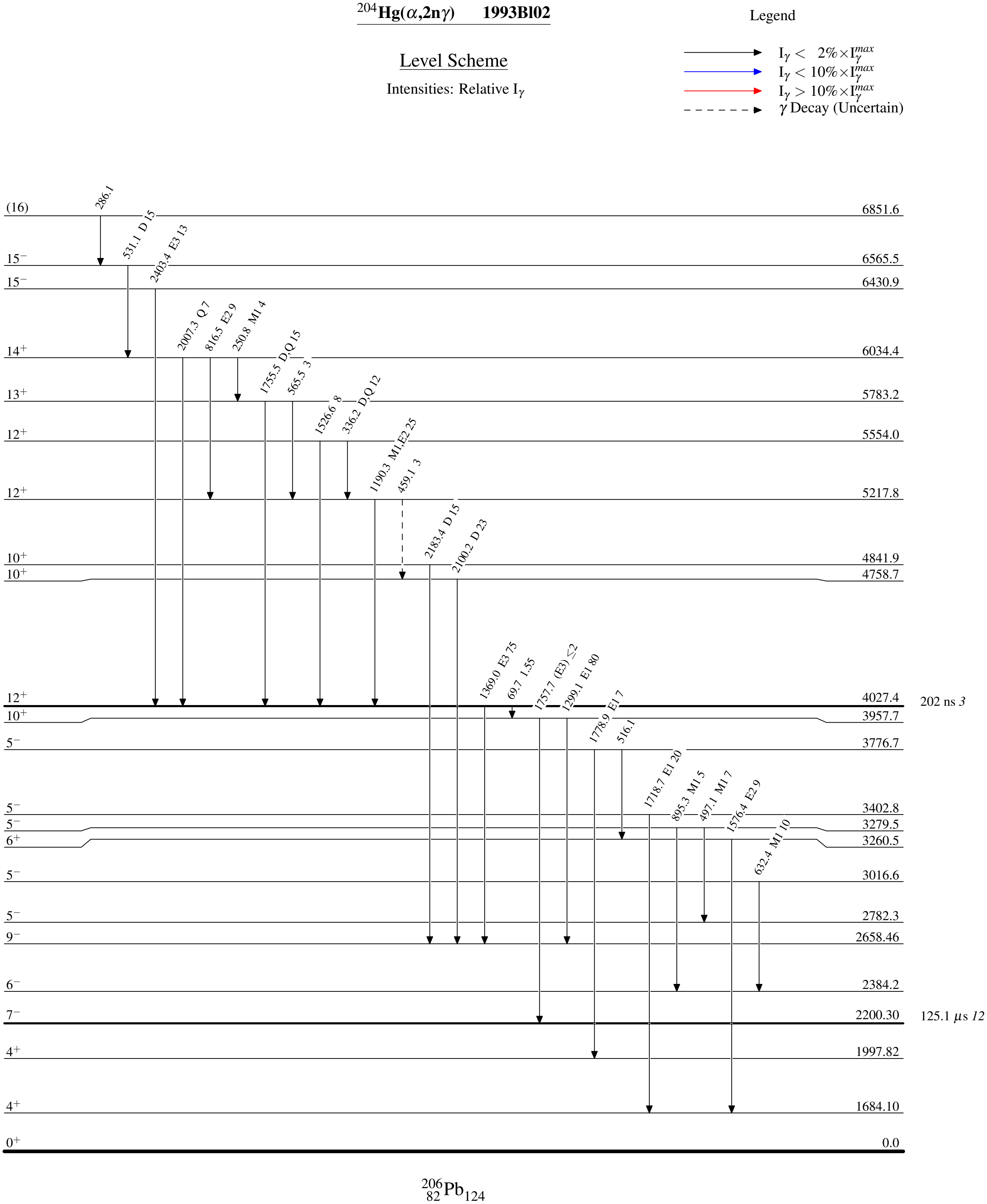
‡ From 1993Bl02 based on $\gamma(\theta)$.

Placement of transition in the level scheme is uncertain.

^{204}Hg(α,2nγ) 1993Bl02

Level Scheme

Intensities: Relative I_γ



^{204}Hg(α,2nγ) 1993Bl02

Level Scheme (continued)

Intensities: Relative I_γ