Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	B. Singh, K. Zuber	ENSDF	12-Apr-2010

Q(β^-)=3.48×10^3 *3*; S(n)=4.85×10^3 *5*; S(p)=9.7×10^3 *syst*; Q(α)=2.23×10^3 *syst* 2012Wa38
Note: Current evaluation has used the following Q record 3485 31 *5*.12E3 15 *9810* calc 2120 calc.
Q(β^-),S(n): from measured mass excess (^{208}Hg)=−13265 *31* (2009Ch08), mass excess (^{208}Tl)=−16749.5 *20* and mass excess (^{207}Hg)=−16220 *150* (2009AuZZ,2003Au03).
S(p),Q(α): calculated values (1997Mo25).
Assignment: Pb(^{12}C,X). E=360 MeV. Hg separation, p 2614γ (1994Zh02).
Also produced in Pb(^{18}O,X), E=600 MeV (σ=5.0 μb *18*) (2004Zh28). Other papers by the same group: 2003Zh06, 2003Zh19, 1998Zh22, 1997Zh18, 1993Zh07, 1993Zh35.
Measured mass excess=−13265 keV *31* (2009Ch08, Schottky mass spectrometry).
Nuclear structure calculations for Hg isotopes: 1999Sh04.

^{208}Hg Levels

Cross Reference (XREF) Flags

A ^{9}Be(^{238}U,Xγ):isomer

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0[#]	0$^+$	41 min *+5−4*	A	%β^-=100 T$_{1/2}$: from 1997Zh18. Earlier value from these authors has been reported as 42 min *+23−12* (1994Zh02,1993Zh35,1993Zh07,1993ZhZU).
669.0 *5*	(2$^+$)		A	Configuration=$\nu g^2_{9/2}$ $_{2+}$ with mixing of $\pi(s_{1/2}d_{3/2})$ (2009Al29).
1093.9[#] *7*	(4$^+$)		A	
1296.9[#] *9*	(6$^+$)		A	
1296.9+x[#]	(8$^+$)	99 ns *14*	A	%IT=100 T$_{1/2}$: from γ(t) gated on 669.0γ, 424.9γ and 203.0γ (2009Al29).

[†] From Eγ's, assuming Δ(Eγ)=0.5 KeV for each γ ray.
[‡] From shell-model predictions and probable yrast sequence.
[#] Dominant configuration=$\nu g^2_{9/2}$ (2009Al29).

γ(^{208}Hg)

E$_i$(level)	J$_i^\pi$	E$_\gamma$	I$_\gamma$	E$_f$	J$_f^\pi$	Mult.	α[†]	Comments
669.0	(2$^+$)	669.0	100	0	0$^+$			
1093.9	(4$^+$)	424.9	100	669.0	(2$^+$)			
1296.9	(6$^+$)	203.0	100	1093.9	(4$^+$)	(E2)	0.37	Mult.: from α(exp) deduced from intensity balance, assuming cascade of E2 transitions (2009Al29).
1296.9+x	(8$^+$)	x		1296.9	(6$^+$)			E$_\gamma$: x<83 keV (binding energy of the K electron in Hg), as suggested by the observed low intensity of Hg K$_\alpha$ x rays (2009Al29). B(E2)(W.u.)=1.9 *4*−1.58 22 for a transition of Eγ=20-80 keV as compared to B(E2)(W.u.)=1.22 from shell-model calculations (2009Al29). Comparison with similar 8$^+$ to 6$^+$ transition in N=128, ^{212}Po having B(E2)(W.u.)=2.30 gives (Eγ)^5(1+α)=3.4×10^{10} for

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{208}Hg)$ (continued)

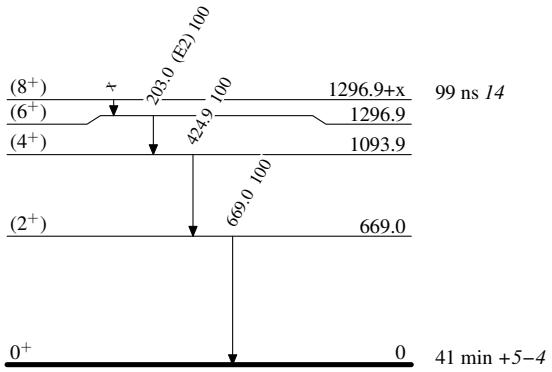
E_i(level)	E_γ	Comments

† 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.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{208}_{80}Hg_{128}$