Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Tibor Kibedi and Coral M. Baglin	ENSDF	15-Mar-2010

S(n)=1.25×10^4 *syst*; S(p)=8.3×10^2 *16*; Q(α)=7524 *7* 2012Wa38
Note: Current evaluation has used the following Q record 12660 syst 8.1E2 21 *7525* 6 2003Au03,2009Sa27.
Uncertainties: 360 (S(n))) (2003Au03,2009AuZZ).
Q(εp)=9090 *230* (2003Au03,2009AuZZ).
Q(α): From Eα=7350 *6*, the weighted average of measured Eα=7350 *12* (1999Se14), 7361 *14* (2004Ke06) and 7348 *7* (2009Sa27) for α decay of ^{172}Hg to ^{168}Pt, assuming a g.s. to g.s. transition. Q(α)=7525 *12* in 2003Au03 and 2009AuZZ is based on the datum of 1999Se14 alone.
Identification: α decay correlated with known α decay from the ^{168}Pt daughter (1999Se14) and from the ^{164}Os granddaughter (2004Ke06).
Production: ^{96}Ru(^{78}Kr,2n), E(^{78}Kr)=375 MeV (1999Se14). isotopically enriched target; fragment mass analyzer with position sensitive parallel-grid avalanche counter in focal plane, double-sided Si strip detector; observed spatial and time correlations between fragment implantation and its decay; measured Eα, $T_{1/2}$ (^{172}Hg). Confirmed by 2004Ke06 and 2009Sa27 using same reaction, and E(^{78}Kr)=361-391 MeV and 337-355 MeV, respectively.

^{172}Hg Levels

Cross Reference (XREF) Flags

A ^{96}Ru(^{78}Kr,2nγ)

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0#	0$^+$	231 μs *9*	A	%α≈100 %α: α decay only has been observed (2009Sa27,2004Ke06,1999Se14). Gross β decay theory predicts a partial β-decay halflife of ≈0.7 s (1973Ta30) and microscopic calculations ≈0.20 s (1993Hi08), implying %ε+%β^+≈0.04% and ≈0.13%, respectively. J$^\pi$: g.s. of even-even nucleus. $T_{1/2}$: from recoil-α(t) (2009Sa27). Others: 0.25 ms *+35−9* from a(t) (1999Se14) and 0.32 ms *+32−11* (2004Ke06).
672.8# *4*	(2$^+$)		A	
1518.6# *5*	(4$^+$)		A	E(level): an alternative value of 1432.8 *7* is possible depending on the order of 846γ and 760γ.
2278.6# *8*	(6$^+$)		A	

† From Eγ. Note, however, that order of 846γ and 760γ is tentative.
‡ Suggested by 2009Sa27 based on band structure, except as noted.
# Band(A): K$^\pi$=0$^+$ g.s. band.

γ(^{172}Hg)

E$_i$(level)	J$_i^\pi$	E$_\gamma$†	I$_\gamma$†	E$_f$	J$_f^\pi$
672.8	(2$^+$)	672.8 *4*	100	0.0	0$^+$
1518.6	(4$^+$)	845.8 *3*	100	672.8	(2$^+$)
2278.6	(6$^+$)	760.0 *6*	100	1518.6	(4$^+$)

† From ^{96}Ru(^{78}Kr,2nγ).

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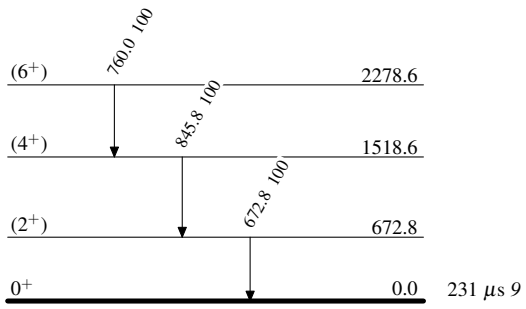
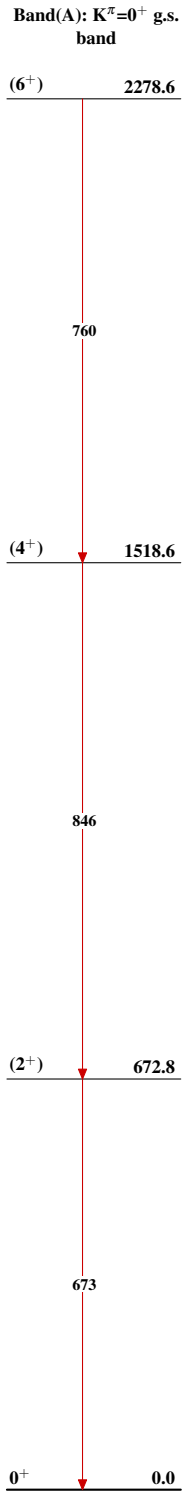
Level Scheme

Intensities: Relative photon branching from each level



$^{172}_{80}Hg_{92}$

Adopted Levels, Gammas



$^{172}_{80}Hg_{92}$