^{173}Hg α decay 2004Ke06,1999Se14

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 2033 (2008)	15-Jun-2008

Parent: ^{173}Hg: E=0.0; $J^{\pi}=(7/2^{-})$; $T_{1/2}$=0.7 ms *+4−2*; Q(α)=7380 *50*; %α decay≈100.0

^{173}Hg-%α decay: Only α decay has been observed from ^{173}Hg (1999Se14). Microscopic theory prediction of partial β decay half-life (1997Mo25) is 0.24 s implying %ε+%β^{+}=0.29.

2004Ke06: ^{173}Hg from ^{96}Ru(^{78}Kr,N), E=361-391 MeV, 96.52% ^{96}Ru target; RITU gas-filled separator with position-sensitive Si strip detector In focal plane; evaporation residues identified using method of position and time correlation with subsequent mother and daughter α decays; measured Eα, recoil-α(^{173}Hg)-α(^{169}Pt) time correlation, ^{173}Hg and ^{169}Pt half-life.

1999Se14: ^{173}Hg source from ^{96}Ru(^{80}Kr,3n), E=400 MeV; 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 decays; measured Eα, parent $T_{1/2}$.

Parent $T_{1/2}$=0.7 ms *+4−2* is weighted average of 0.93 ms *+57−26* (1999Se14) and 0.59 ms *+48−18* (2004Ke06).

^{169}Pt Levels

E(level)
0.0

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
7203 *9*	0.0	≈100	≈1.0	Eα: weighted average of 7211 *11* (1999Se14) and 7192 *13* (2004Ke06); Eα=7203 *9* implies Q(α)=7373 *9* (assuming this is a g.s. to g.s. transition) cf. Q(α)=7381 *50* In 2003Au03. correlated with known 6.7-MeV α from ^{169}Pt α decay (1999Se14).

[†] 1.0 *6* if r_0(^{169}Pt)=1.55 based on r_0(^{170}Pt)=1.548 *12* and ro(^{168}Pt)=1.55 *+3−10* and %α(^{173}Hg)=100.

[‡] For absolute intensity per 100 decays, multiply by ≈1.0.