^{172}Hg α decay 2009Sa27,2004Ke06,1999Se14

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

Parent: ^{172}Hg: E=0.0; $J^\pi=0^+$; $T_{1/2}$=231 μs *9*; Q(α)=7525 *6*; %α decay≈100.0

2009Sa27: ^{172}Hg from ^{96}Ru(^{78}Kr,2n), E=337-355 MeV; 96.52% ^{96}Ru target; RITU gas-filled separator; JUROGAM Compton-suppressed Ge detector array (43 EUROGAM Phase I and GASP type detectors); fusion products implanted In double-sided Si strip detectors At focal plane of the GREAT spectrometer which also includes 28 Si PIN diodes, one segmented planar Ge detector and 3 clover Ge detectors; recoil decay tagging technique; measured Eγ, Eα, recoil-α(t), parent-daughter α correlations.

2004Ke06: ^{172}Hg from ^{96}Ru(^{78}Kr,2n), 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(^{172}Hg)-α(^{168}Pt) time correlation, ^{172}Hg and ^{168}Pt half-life.

1999Se14: ^{172}Hg source from ^{96}Ru(^{78}Kr,2n), E=375 MeV; isotopically enriched target; fragment mass analyzer, double-sided Si strip detector, observed spatial and time correlations between fragment implantation and its decays; measured Eα, parent $T_{1/2}$.

Parent $T_{1/2}$=231 μs *9* from 2009Sa27. other data: 0.25 ms *+35−9* (1999Se14), 0.32 ms *+32−11* (2004Ke06).

^{168}Pt Levels

E(level)	J^π[†]
0.0	0^+

[†] From Adopted Levels.

α radiations

Eα	E(level)	HF[†]	Comments
7350 *6*	0.0	1.0	Eα: weighted average of 7350 *12* (1999Se14) and 7361 *14* (2004Ke06) and 7348 *7* (2009Sa27). this Eα implies Q(α)=7525 *6* cf. 7525 *12* In 2003Au03 and 2009AuZZ. Iα: only one α group was observed. Possible α decay to the 581.4-keV 2^+ excited state is estimated to be <1.4% of α decay by requiring its hindrance factor to be greater than 1.0. I(7350α)=99.3 *7* per 100 α decays is used in the computation of the r_0 parameter. correlated with 6820α from ^{168}Pt and 6310α from ^{164}Os (2004Ke06).

[†] r_0=1.556 *3* if %α(^{172}Hg)=100, assuming HF=1, Q(α)=7525 *6* from measured Eα=7350 *6*, $T_{1/2}$(172HG)=231 μs *9* (2009Sa27) and Iα(to g.s.)=99.3 *7* (based on possible branch to 2^+ 581 level of <1.4 for HF>1).