^{176}Hg α decay 1999Po09,1996Pa01

History

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

Parent: ^{176}Hg: E=0.0; $J^\pi=0^+$; $T_{1/2}$=21.6 ms *9*; Q(α)=6908 *5*; %α decay=94 *12*

Others: 1983Sc24, 1984ScZQ.

1983Sc24: ^{176}Hg produced using Rb(^{92}Mo,X), identification based on Eα systematics for even-even Hg isotopes; measured Eα.

$T_{1/2}(^{176}Hg)$=21.6 ms *9*, weighted average of 21 ms *4* (1999Po09), 20 ms *2* (2002Ro17), 22 ms *1* (2004GoZZ; misprinted As 22 s *1* In table 5.1). others: 18 ms *10* (1996Pa01), 34 ms *+18−9* (1983Sc24 and 1984ScZQ).

%α: 94 *12* from 1999Po09. consistent with branching implied by theoretical partial β half-life calculations. The Moller-Nix calculations (1997Mo25) give $T_{1/2}(\beta^+)$=0.65 s; the gross β^-decay theory calculations of 1973Ta30 give $T_{1/2}(\beta^+)\approx$2 s. These partial half-lives and the total half-life of 21.6 ms *9* yield $\%\beta^+$=3.3 and $\%\beta^+\approx$1, respectively.

^{172}Pt Levels

E(level)	J^π
0.0	0^+

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
6751 *5*	0.0	100	1.0	Eα: weighted average of Eα=6750 *20* (1983Sc24), Eα=6767 *10* (1984ScZQ), Eα=6750 *20* (1996Pa01), Eα=6740 *6* (1999Po09), 6755 *5* (2004GoZZ). this implies Q(α)(^{176}Hg)=6908 *5*, cf. Q(α)=6897 *6* (2003Au03) As implied by datum of 1999Po09 and 6896 *6* (2009AuZZ). Iα: only one α group was observed. Intensity of a possible unobserved≈6300−keV α to the $2^{(+)}$ state in ^{172}Pt at 458 keV is estimated to be less than 2 per 100 α decays by requiring its hindrance factor to be greater than 1.0. correlated with 6317α from ^{172}Pt (2002Ro17, 2004GoZZ).

[†] $r_0(^{172}Pt)$=1.541 *7* is deduced assuming Hf(6747α)=1.0 and Q(α)=6908 *5* from adopted Eα=6751 *5*.

[‡] For absolute intensity per 100 decays, multiply by 0.94 *12*.