^{178}Hg α decay 1998Ak04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, Huo Junde	NDS 87, 15 (1999)	1-Nov-1998

Parent: ^{178}Hg: E=0.0; $J^\pi=0^+$; $T_{1/2}$=0.266 s *25*; Q(α)=6578 *6*; %α decay=97 *25*

$T_{1/2}(^{178}Hg)$=266 ms *25*, average of the measured half-lives is used here for the calculations: $T_{1/2}$=260 ms *30* (1979Ha10), 250 ms *25* (1991Se01), and 287 ms *23* (1996Pa01).

%α=97 *+3−25* is calculated from r_0=1.545 *10* (obtained from r_0 systematics) and the total half-life of 266 ms *25*. The partial α half-life is calculated as $T_{1/2}(6430\alpha)$=280 ms *60* from r_0=1.545 *10*. The α branching was estimated as≈50% by 1979Ha10 and adopted as≈70% by 1994Br18. $T_{1/2}(\beta$ decay)≈5 s and 1.16 s were calculated by 1973Ta30 and 1997MoZW, respectively. These calculated half-lives give %ε+%β^+=5-23, consistent with the branching obtained from r_0 systematics.

Additional information 1.

Q(α)(^{178}Hg)=6578 *6* is recommended by 1995Au04.

^{174}Pt Levels

E(level)	J^π
0.0	0^+

α radiations

Eα	E(level)	HF[†]	Comments
6430 *6*	0.0	1.0	Eα: measurement of 1979Ha10. A recent measurement of 6428 *9* by 1996Pa01 is in good agreement with this energy. Iα: only one α group was observed. Intensity of an unobserved≈6072α to 2^+ state in ^{174}Pt, probably at about 350 keV, is estimated to be less than 4 per 100 α decays by requiring hindrance factor for it to be greater than 1.0. Iα=98 *2* per 100 α decays is used in calculations.

[†] $r_0(^{174}Pt)$=1.545 *10* is estimated from $r_0(^{176}Pt)$ and $r_0(^{178}Pt)$.