

^{173}Au α decay (14.0 ms) [1999Po09](#),[1996Pa01](#),[1983Sc24](#)

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

Parent: ^{173}Au : E=214 23; $J^\pi=(11/2^-)$; $T_{1/2}=14.0$ ms 9; $Q(\alpha)=6836$ 5; $\% \alpha$ decay=92 13

^{173}Au - $\% \alpha$ decay: From [1999Po09](#).

Other: [2001Ko44](#).

[1983Sc24](#): Sources from ^{92}Mo bombardments of rubidium-molybdenum targets (velocity-filter, evaporation-residue separation); measured $E\alpha$, $I\alpha$ (position-sensitive Si surface-barrier detectors).

[1996Pa01](#): sources from heavy-ion fusion-evaporation reactions; recoil mass separator, double-sided Si strip detector (FWHM \leq 20 keV); measured $E\alpha$, parent and daughter $T_{1/2}$ and $\% \alpha(^{169}\text{Ir})$.

[1999Po09](#): produced ^{177}Tl grandparent using $^{102}\text{Pd}(^{78}\text{Kr},p2n)$ reaction at 370 MeV; fragment mass analyzer, recoils implanted into double-sided Si strip detector; measured $E\alpha$, E(p), p- α and α - α correlations, $T_{1/2}$, $\% \alpha$, $\% p$.

Parent $T_{1/2}=14.0$ ms 9, the weighted average of 14 ms 1 ([2001Ko44](#),[2004GoZZ](#)), 12 ms +3-2 ([1999Po09](#)) and 15 ms 2 ([1996Pa01](#)). Other: 59 ms +45-18 ([1983Sc24](#)).

Parent level energy is 214 23 from [1999Po09](#) based on E(p) from ^{177}Tl g.s. and from ^{177}Tl isomeric state to ^{176}Hg g.s..

 ^{169}Ir Levels

E(level)	J^π	$T_{1/2}$	Comments
153 24	(11/2 $^-$)	0.308 s 22	$J^\pi, T_{1/2}$: from Adopted Levels. E(level): based on $E\alpha=6732$ 4 from 214 23 parent level and $Q(\alpha)=6836$ 5.

 α radiations

$E\alpha$	E(level)	$I\alpha^\ddagger$	HF †	Comments
6737 4	153	100	1.6 3	$E\alpha$: weighted average of 6742 5 (2004GoZZ), 6732 4 (1999Po09), 6749 9 (1996Pa01) and 6720 20 (1983Sc24). other $E\alpha$: 6740 (2001Ko44 ; probably superseded by 2004GoZZ). correlated with 6119 α from ^{169}Ir (2004GoZZ).

† If $r_0=1.55$ 1 (based on $r_0(^{168}\text{Os})=1.558$ 8 in [1998Ak04](#), and $r_0(^{170}\text{Pt})=1.548$ 12 ([2002Ba93](#))), parent $T_{1/2}=14.0$ ms 9 ([1999Po09](#)), $\% \alpha(^{173}\text{Au})=92$ 13 ([1999Po09](#)) and $Q(\alpha)=6836$ 5.

‡ For absolute intensity per 100 decays, multiply by 0.92 13.