^{173}Pt α decay 1996Pa01,1981De22,1979Ha10

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

Parent: ^{173}Pt: E=0.0; J^{π}=(5/2$^-$); $T_{1/2}$=382 ms *2*; Q(α)=6350 *50*; %α decay=86 *4*

^{173}Pt-%α decay: From weighted average of %6211α data: 84 *6* (from ratio of Iα for α group for ^{173}Pt daughter and for ^{177}Hg parent in the same spectrum) (1979Ha10), 83 *14* (1996Pa01, 6225α) and 82 *6* (2004GoZZ, 6232α); this yields %α=83 *4* for line which constitutes 96% 1 of total ^{173}Pt α decay (2004GoZZ).

Others: 1966Si08, 1973Ga08, 1982En03, 2002Ro17.

1979Ha10: sources from decay of ^{177}Hg parent activity; measured Eα, Iα (Si surface-barrier detector).

1981De22: sources from $^{112,\ 116Sn,\ 116}$Sn3in(^{63}Cu,xnyp) (E(^{63}Cu)=245-300 MeV, helium-jet transport); enriched targets; measured Eα, Iα (annular Si detector).

1982En03: sources from ^{144}Sm(^{32}S,3n) (E(^{32}S)=139.5-201 MeV, recoil-mass selection); Sm targets enriched to 96.33% in ^{144}Sm; measured Eα, Iα (thin gas ΔE, surface-barrier E detectors).

1996Pa01: source from 354 MeV ^{70}Ge bombardment of ^{106}Cd; recoil mass separator, double-sided Si strip detector (FWHM≤20 keV); measured Eα, parent and daughter $T_{1/2}$ and %α.

Parent $T_{1/2}$=382 ms *2* from 6232α(t) (2004GoZZ); the weighted average of all data (325 ms *20* (1981De22), 360 ms *20* (1982En03), 290 ms *60* (1992ToZX), 376 ms *11* (1996Pa01), 370 ms *13* (2002Ro17), 382 ms *2*, 400 ms *11*, 392 ms *15*, 411 ms *19* (2004GoZZ)) is 382 ms *3*.

^{169}Os Levels

E(level)[†]	J^{π}	$T_{1/2}$	Comments
0.0	(5/2$^-$)	3.40 s *9*	$T_{1/2}$: from Adopted Levels.
101 *7*			E(level): from Eα=6133 *5* to this level and Eα=6232 *5* to g.s. In 2004GoZZ.
136.2 *5*			
171.2 *5*			

[†] From Eγ, except As noted.

α radiations

Eα	E(level)	Iα[†@]	HF[‡]	Comments
6067[#] *5*	171.2	≈1	≈38	
6100[#] *5*	136.2	≈1	≈52	
6133[#] *5*	101	≈2	≈36	
6211[#] *6*	0.0	96 *1*	1.81 *11*	g.s. transition assumed. Correlated with 5575α from ^{169}Os(g.s.) (2002Ro17). Eα: unweighted average of 6190 *20* (1966Si08), 6190 *10* (1973Ga08), 6212 *8* (6213 datum of 1979Ha10 after adjustment by 1991Ry01), 6205 *3* (1981De22), 6222 *10* (1982En03), 6225 *9* (1996Pa01), 6232 *5* (2004GoZZ). The weighted average of these data is 6212 *5*. Eα implies Q(α)=6358 *6* if this is a g.s. to g.s. transition compared with Q(α)=6355 *50* from 2003Au03.

[†] From 2004GoZZ.

[‡] If r_0=1.556 *8* (from r_0(^{170}Os)=1.553 *14* and r_0(^{168}Os)=1.558 *8* in 1998Ak04), $T_{1/2}$(173PT)=382 ms *2*, %α=86 *4* and Q(α)=6358 *6*.

[#] Correlated with 5581α and 5537α from ^{169}Os (2004GoZZ).

[@] For absolute intensity per 100 decays, multiply by 0.86 *4*.

^{173}Pt α decay 1996Pa01,1981De22,1979Ha10 (continued)

$\gamma(^{169}Os)$

E_γ [†]	E_i(level)	E_f	J^π_f
136.2 *5*	136.2	0.0	(5/2$^-$)
171.2 *5*	171.2	0.0	(5/2$^-$)

[†] From 2004GoZZ.

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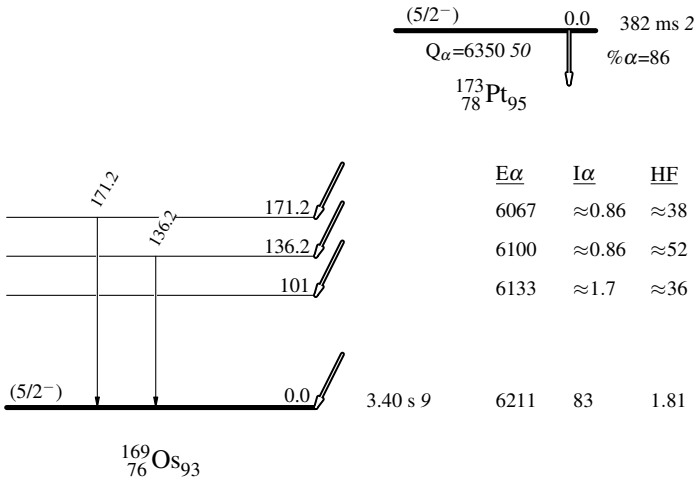
Decay Scheme



Eα	Iα	HF
6067	≈0.86	≈38
6100	≈0.86	≈52
6133	≈1.7	≈36
6211	83	1.81